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REVIEW

Analysis of the NANDA-I taxonomy "maternal-fetal dyad" concept in high-risk pregnancy: integrative review

Análise do conceito "binômio mãe-feto" da taxonomia da NANDA-I em gestantes de alto risco: revisão integrativa

Análisis del concepto "binomio madre-feto" de la taxonomía nanda-i en mujeres embarazadas de alto riesgo: revisión integrativa

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ABSTRACT

Objective: to analyze the NANDA-I taxonomy "maternal-fetal dyad" concept in high-risk pregnancy. **Method:** an integrative literature review based on the Conceptual Analysis model proposed by Walker and Avant. It was conducted at PUBMED, CINAHL, SCOPUS, LILACS and SciELO, with the descriptors: Complications of pregnancy, Risk Factors, and Pregnancy, High-Risk (from 2008-2020). **Result:** the sample consisted of 44 articles, which identified two attributes and 21 antecedents of the concept. **Conclusion:** concept analysis allowed to identify the attributes and antecedents of the "maternal-fetal dyad" concept in high-risk pregnancy, in addition to raising and clarifying ideas. It was possible to identify 12 antecedents that are not included in NANDA-I as well as the need to review the definition of the diagnosis proposed by the taxonomy.

Descriptors: Nursing Diagnosis; Risk Factors; Fetus; High Risk Pregnancy; Review.

RESUMO

Objetivo: analisar o conceito "binômio mãe-feto" da taxonomia da NANDA-I em gestantes de alto risco. **Método:** revisão integrativa da literatura, fundamentada no modelo de Análise Conceitual proposto por Walker e Avant. Realizada nas bases de dados PubMed, CINAHL, Scopus, LILACS e na biblioteca eletrônica SciELO, com os descritores: *Pregnancy Complications, Risk Factors* e *Pregnancy, High-Risk*, com recorte temporal de 2008-2020. **Resultado:** a amostra constituiu-se de 44 artigos, que identificaram dois atributos e 21 antecedentes do conceito. **Conclusão:** a análise de conceito permitiu identificar os atributos e os antecedentes do conceito "binômio mãe-feto" em gestantes de alto risco, além de suscitar e esclarecer ideias. Foi possível identificar 12 antecedentes que não constam na NANDA-I, bem como a necessidade de revisar a definição do diagnóstico proposta pela taxonomia.

Descritores: Diagnóstico de Enfermagem; Fatores de Risco; Feto; Gravidez de Alto Risco; Revisão.

RESUMEN

Objetivo: analizar el concepto "binomio madre-feto"" de la taxonomía NANDA-I en mujeres embarazadas de alto riesgo. **Método:** una revisión bibliográfica integradora, basada en el modelo de Análisis Conceptual propuesto por Walker y Avant. Realizado en las bases de datos PubMed, CINAHL, Scopus, LILACS y en la biblioteca electrónica SciELO, con los descriptores: Pregnancy Complications, Risk Factors y Pregnancy, High-Risk, con un marco temporal de 2008-2020. **Resultado:** la muestra consistió en 44 artículos, que identificaron dos atributos y 21 antecedentes del concepto. **Conclusión:** el análisis conceptual permitió identificar los atributos y antecedentes del concepto "binomio madre-feto" en mujeres embarazadas de alto riesgo, planteando y aclarando ideas. Fue posible identificar 12 antecedentes que no están incluidos en NANDA-I, así como la necesidad de revisar la definición del diagnóstico propuesto por la taxonomía.

Descriptores: Diagnóstico de Enfermería; Factores de Riesgo; Feto; Embarazo de Alto Riesgo; Revisión.

INTRODUCTION

Threat to the well-being of the maternal-fetal dyad in the gestational period arises from several clinical, obstetric, and social conditions that can cause maternal and/or fetal complications and compromise their outcome. Pregnancy that occurs with complications corresponds to 20% of the total pregnancies and is called high risk[1].

Due to the unexpected conditions associated with pregnancy, there is a real or potential risk to the health and well-being of the mother and/or the child. Risk assessment is necessary to identify any condition that may impact the dyad. Assistance to pregnant women, with detailed antecedents, complete physical examination and laboratory findings may reveal risks of maternal and/or fetal mortality or morbidity[2].

In assisting high-risk pregnancy, nurses must provide proper care and act in promoting the health of women and the child[1-2]. The methodological instrument used to guide care actions is the Nursing Process (NP), which supports the Systematization of Nursing Care (SNC). NP assists nurses in noticing individuals' health problems, planning and implementing their actions, as well as assessing the results[3]. NP consists of data collection, nursing diagnosis, planning, implementation, and assessment[4].

To promote care, we seek to implement the SNC[3]. In order to carry out its accomplishment, some nursing classifications were developed to standardize the language among nurses. Among them is the NANDA International (NANDA-I) taxonomy[4], which allows nurses to identify nursing diagnoses (ND) according to the needs of the individual, family, or community.

In 2008, NANDA-I integrated the "risk for disturbed maternal-fetal dyad" ND, which is inserted in the "sexuality" domain and in the "reproduction" class. Diagnosis is defined by NANDA-I as "at risk for disruption of the symbiotic maternal-fetal dyad as a result of comorbidity or pregnancy-related conditions"[4]. Its level of evidence is 2.1, which corresponds to the ND that was accepted for integration and publication in NANDA-I, since literature was cited both for its definition and for its clinical indicators[4]. However, no integrative literature review or conceptual analysis studies have been carried out that depict evidence that supports the components of the diagnosis and so that its level of evidence can increase.

The 11th edition of NANDA-I (2018-2020)[4] recategorized some risk factors in populations at risk (group of people who have characteristics that are susceptible to a specific human response that cannot be modified by nurses independently) and in related conditions (diagnoses) injuries, procedures, medical devices or pharmaceutical agents, which are not independently modifiable by nurses). The diagnosis under study consists of three risk factors, four related conditions and no population at risk. Thus, it is necessary to review the elements of the "risk for disturbed maternal-fetal dyad" ND in high-risk pregnancy.

This research contributes to improve the maternal-fetal dyad concept, which is relevant to understand the symbiotic relationship between the mother and the child, and to guide the implementation of SNC. Moreover, it offers subsidies for nurses' clinical practice in assisting pregnant women, especially at high-risk. Concept analysis will be the basis to proceed with the development of validation of the ND under study.

OBJECTIVE

To analyze the NANDA-I taxonomy "maternal-fetal dyad" concept in high-risk pregnancy.

METHODS

Type of study

This is the concept analysis, which was carried out through the theoretical framework of Walker and Avant[5] and through an integrative review, concomitantly.

The concept analysis corresponds to the first stage of ND validation studies and consists of eight stages, proposed by Walker and Avant[5]: 1. Choosing a concept; 2. Determining the purpose of analysis; 3. Identifying all uses of the concept; 4. Defining attributes; 5. Identifying a model case; 6. Identifying borderline, related, and contrary cases; 7. Identifying antecedents and consequences; 8. Defining empirical references.

For this study, we carried out six steps: choosing a concept, determining the purpose of analysis, defining attributes, identifying antecedents and consequences (risk ND contains only antecedents - risk factors, population at risk, and related conditions)[4], identifying a model case, and identifying borderline, related, and contrary cases. Next, the steps performed and their operation will be described:

1. Choosing a concept: the chosen concept was the "maternal-fetal dyad" of NANDA-I taxonomy. This concept emerged from the conceptual core of the "risk for disturbed maternal-fetal dyad" ND.
2. Determining the purpose of analysis: this analysis aimed to identify the critical attributes and antecedents of the NANDA-I taxonomy "maternal-fetal dyad" concept in high-risk pregnancy;
3. Defining attributes: this step was carried out through integrative review. From it, the attributes associated with the NANDA-I taxonomy "disturbed maternal-fetal dyad" concept were identified, especially the recurring characteristics[4-5]. It is noteworthy that these attributes will be used to revise the "risk for disturbed maternal-fetal dyad" ND definition;
4. Identifying antecedents and consequences: it was also carried out through the integrative review. The antecedents and consequences that negatively affect the maternal-fetal dyad have been identified, which are risk factors, population at risk and related conditions[4-5]. They will be used to review the elements of the "risk for disturbed maternal-fetal dyad" ND;
5. Identifying a model case: a model case was identified to exemplify what the concept is. According to Walker and Avant[5], the case can be sought in literature, be real or constructed by the analyst;
6. Identifying borderline, related, and contrary cases: borderline, related, and contrary cases have been identified to exemplify what the concept is not. These cases can also be sought in literature, be real or constructed by the analyst[5].

The integrative review was carried out with the purpose of operationalizing steps 3 and 4, as mentioned. This review went

through six steps: 1. Identifying the theme and the research question; 2. Sampling or literature search; 3. Defining the information to be extracted from the selected articles (categorization of studies); 4. Assessing the studies included in the integrative review; 5. Interpreting the results; 6. Presenting the knowledge review or synthesis[6].

Thus, the question that guided the integrative literature review was: what are the critical attributes and antecedents of the NANDA-I taxonomy "maternal-fetal dyad" concept in high-risk pregnancy?

Search strategy

To select the studies, a search was performed through access to PubMed, CINAHL, Scopus, LILACS and SciELO. The descriptors used are indexed in the Health Sciences Descriptors (DeCS) and in the Medical Subject Heading (MeSH) were "Pregnancy, High--Risk"; "Complications of pregnancy" and "Risk Factors", with the Boolean operator AND. Selected articles were published between 2008 and 2020.

Inclusion and exclusion criteria

Original and review articles were available, available electronically and in full, published in Portuguese, English or Spanish and which addressed the subject under study. Theses, dissertations and letters to the editor were excluded.

Study selection process

One thousand three hundred and forty-six studies were identified in databases and virtual library. Titles and abstracts were read. Of this total, five articles were excluded, as they were repeated between databases. Subsequently, 1,289 articles were excluded, as they did not meet the proposed criteria, totaling 52 articles to be read in full. Of the 52 articles, eight publications that did not address the attributes and background of the concept were excluded. At the end, 44 articles were selected to support the integrative review (Figure 1).

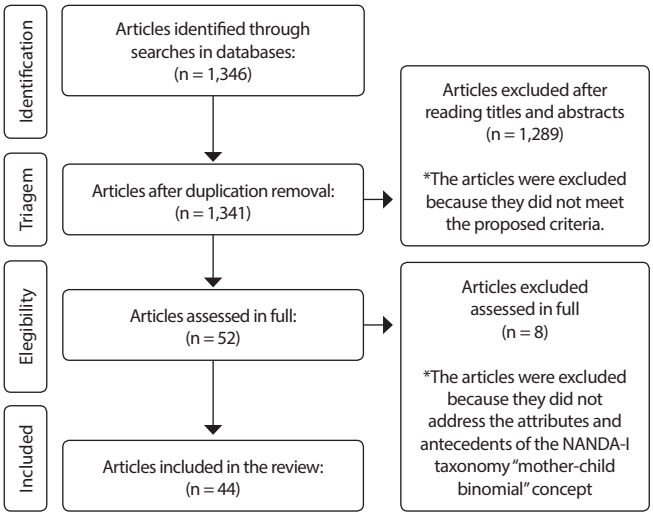

Figure 1 - Flowchart of study selection according to Preferred Reporting Items for Systematic Reviews and Meta-Analyzes (PRISMA), 2020

Data extraction and assessment of the methodological quality of eligible studies

Defining the information to be extracted from the selected articles was carried out using the data collection instrument developed for this research. The instrument contained the characterization of the studies, namely: title, authors, database, language, country, year and field of publication, objective, method, level of evidence (the evaluation was carried out using the evidence-based practices guide in nursing)[7] and methodological rigor (the evaluation was carried out through the Critical Appraisal Skills Program (CASP)[8] specific to each type of study). Moreover, the instrument made it possible to obtain the attributes and antecedents of the "maternal-fetal dyad" concept that were found.

Analysis of data and interpretation of results

The fourth step, assessing the studies included in the integrative review, aimed at analyzing the collected data. The fifth stage, interpreting the results, corresponded to the discussion of the main results, comparing them with the elements of the "risk for disturbed maternal-fetal dyad" ND. The review was presented in the last step.

RESULTS

The elements that characterize the concept (attributes) and antecedents (risk factors, population at risk and related conditions) were identified. To identify the antecedents, events that negatively affect the maternal-fetal dyad were analyzed (Chart 1).

Furthermore, it should be noted that all articles in the review were classified in category A (6 to 10 points) for methodological rigor, which are studies with good methodological quality and minimized bias (n=44)[9-52]. Most articles were published between 2013 and 2015 (n=22)[9-11,15-17,19-21,23-32,40-42] and in non-nursing journals(n=41)[12-18,20-53]. The articles in English (n=30)[9-16,18-31,41,46-52], published in the United States of America (n=12)[10-16,18-19,22,24,26] and with evidence level IV - well-outlined cohort and case-control studies stood out (n=17)[14,16-18,21-25,31-32,34,36-37,40-41,43,46-48,50]. Most were selected mainly from the Scopus database (n=16)[17-32].

Of the two attributes found, only "symbiotic maternal-fetal relationship" is in NAND-I's definition of the diagnosis under study.

Of the ten identified risk factors, five are included in the NANDA-I taxonomy[4], despite using different nomenclature such as tobacco, alcohol and drugs; violence and absent/inadequate prenatal care. Analysis allowed identifying other risk factors of the diagnosis, which are not included in NANDA-I such as overweight, obesity, low gestational weight gain, absent/inadequate partner support, and absent/inadequate social support.

Four related conditions (complications of pregnancy, impaired glucose metabolism, medication regimen and compromised oxygen transfer) are included in NANDA-I[4] and two are not (diseases and maternal conditions). None of the population at risk found in this study is in that taxonomy.

Furthermore, the model case and the opposite case were identified, which were adapted from the literature[16] (Charts 2 and 3). It is noteworthy that these cases will show the representation of the concept and what the concept is not, respectively.

Chart 1 - Distribution of studies included in the integrative review according to title, year, atributes, and antecedents, 2020

Title	Year	Attributes	Antecedents
Pre-pregnancy counselling for women with chronic kidney disease: a retrospective analysis of nine years' experience[9]	2015	-	Related conditions: complications of pregnancy; compromised oxygen transfer; medication regimen.
Preeclampsia in high risk women is characterized by risk group-specific abnormalities in serum biomarkers[10]	2014	-	Related conditions: complications of pregnancy; compromised oxygen transfer; maternal illnesses.
Complications of pregnancy and Cardiovascular Disease Death: Fifty-Year Follow-Up of the Child Health and Development Studies Pregnancy Cohort[11]	2015	-	Risk factors: overweight and tobacco. Population at risk: preeclampsia in previous pregnancy. Related conditions: complications of pregnancy; compromised oxygen transfer; maternal illnesses.
Understanding the association of biomedical, psychosocial and behavioral risks with adverse pregnancy[12]	2011	-	Risk factors: overweight; tobacco; violence; drugs; alcohol. Related conditions: compromised oxygen transfer and maternal illnesses.
Effect of older maternal age on the risk of spontaneous preterm labor: a population-based study[13]	2009	-	Risk factors: tobacco; drugs; alcohol; low gestational weight gain. Population at risk: increased maternal age. Related conditions: complications of pregnancy; compromised oxygen transfer; maternal illnesses.
Maternal obesity in early pregnancy and risk of adverse outcomes[14]	2013	-	Risk factors: obesity.
Pregnancy characteristics and women's future cardiovascular health: an underused opportunity to improve women's health?[15]	2013	-	Risk factors: tobacco and obesity. Population at risk: increased maternal age. Related conditions: complications of pregnancy; compromised oxygen transfer; maternal illnesses; maternal conditions.

To be continued

Chart 1

Title	Year	Attributes	Antecedents
Maternal risk during pregnancy: a concept analysis[16]	2016	-	Risk factors: drugs.
Deficiência de vitamina D na gravidez e o seu impacto sobre o feto, o recém-nascido e na infância[17]	2015	Maternal-fetal bond; symbiotic maternal-fetal relationship.	Related conditions: complications of pregnancy; compromised oxygen transfer; maternal illnesses; maternal conditions.
Effect of maternal moderate to severe asthma on perinatal outcomes[18]	2010	-	Related conditions: compromised oxygen transfer.
Gestational weight gain and risks for adverse perinatal outcomes: A retrospective cohort study based on the 2009 Institute of Medicine guidelines[19]	2015	-	Risk factors: overweight and obesity. Related conditions: complications of pregnancy; maternal illnesses; maternal conditions.
Obstetrical complications in women with epilepsy[20]	2015	-	Related conditions: compromised oxygen transfer and medication regimen.
Intrauterine growth retardation in foetuses of women with epilepsy[21]	2015	-	Risk factors: tobacco. Related conditions: complications of pregnancy; compromised oxygen transfer; medication regimen.
Risk factors for congenital anomalies in high risk pregnant women: A large study from South India[22]	2017	-	Risk factors: absent/ inadequate prenatal care. Related conditions: complications of pregnancy.
Maternal overweight and obesity and risk of pre-eclampsia in women with type 1 diabetes or type 2 diabetes[23]	2016	-	Population at risk: preeclampsia in previous pregnancy. Related conditions: maternal illnesses.
Body mass index, gestational weight gain, and obstetric complications in Moroccan population[24]	2013	-	Risk factors: overweight and obesity. Related conditions: compromised oxygen transfer and maternal illnesses.
Early gestational weight gain rate and adverse pregnancy outcomes in Korean women[25]	2015	Symbiotic maternal-fetal relationship.	Risk factors: obesity. Population at risk: increased maternal age.
Pregnancy at very increased maternal age: a UK population based cohort study[26]	2017	-	Related conditions: maternal illnesses.

To be continued

Chart 1

Title	Year	Attributes	Antecedents
Pre-pregnancy high-risk factors at first antenatal visit: how predictive are these of pregnancy outcomes?[27]	2014	-	Risk factors: overweight; tobacco; obesity; absent/ inadequate prenatal care. Population at risk: increased maternal age. Related conditions: complications of pregnancy; compromised oxygen transfer; maternal illnesses.
Maternal obesity in early pregnancy and risk of adverse outcome[28]	2013	-	Risk factors: overweight; drugs; alcohol; obesity. Related conditions: complications of pregnancy and maternal illnesses.
Obstetrical complications in women with endometriosis: a cohort study in Japan[29]	2016	-	Related conditions: complications of pregnancy; compromised oxygen transfer; maternal illnesses; maternal conditions.
Patients with subclinical hypothyroidism before 20 weeks of pregnancy have a higher risk of miscarriage: a systematic review and meta-analysis[30]	2017	-	Related conditions: maternal illnesses.
Risk factors and birth outcomes of anaemia in early pregnancy in a nulliparous cohort[31]	2015	-	Related conditions: complications of pregnancy and compromised oxygen transfer.
Weight change across the start of three consecutive pregnancies and the risk of maternal morbidity and SGA birth at the second and third pregnancy[32]	2017	-	Risk factors: overweight and obesity. Related conditions: maternal illnesses.
Morbidade materna grave em um hospital universitário de referência municipal em Campinas, Estado de São Paulo[33]	2008	-	Related conditions: complications of pregnancy.
Estudo retrospectivo das implicações maternas, fetais e perinatais em mulheres portadoras de diabetes, em 20 anos de acompanhamento no Hospital Escola da Universidade Federal do Triângulo Mineiro[34]	2010	Maternal-fetal bond.	Risk factors: tobacco. Related conditions: maternal illnesses.
Aspectos sociodemográficos y obstétricos de la morbilidad materna grave[35]	2017	-	Related conditions: complications of pregnancy and compromised oxygen transfer.

To be continued

Chart 1

Title	Year	Attributes	Antecedents
Morbidade materna grave na microrregião de Barbacena/MG[36]	2016	-	Risk factors: absent/ inadequate prenatal care. Population at risk: increased maternal age. Related conditions: complications of pregnancy; compromised oxygen transfer; maternal illnesses.
Gestações complicadas por sífilis materna e óbito fetal[37]	2011	-	Related conditions: complications of pregnancy; maternal illnesses; maternal conditions.
Influência do estado nutricional materno, ganho de peso e consumo energético sobre o crescimento fetal, em gestações de alto risco[38]	2017	Maternal-fetal bond.	Risk factors: obesity. Related conditions: compromised oxygen transfer and maternal illnesses.
Muerte fetal: caracterización epidemiológica[39]	2016	Maternal-fetal bond.	Risk factors: overweight; tobacco; obesity. Related conditions: complications of pregnancy; compromised oxygen transfer; maternal illnesses.
Estrés psicosocial laboral como factor de riesgo para las complicaciones de la gestación y el bajo peso al nacer[40]	2013	Maternal-fetal bond.	Related conditions: complications of pregnancy and compromised oxygen transfer.
Depressive symptoms in pregnancy and associated factors: longitudinal study[41]	2017	Maternal-fetal bond.	Risk factors: absent/ inadequate partner support and absent/ inadequate social support. Population at risk: unintended pregnancy; low education level; economically disadvantaged. Related conditions: compromised oxygen transfer.
Influencia de la obesidad pregestacional en el riesgo de preeclampsia/ eclampsia[42]	2013	-	Risk factors: obesity. Related conditions: compromised oxygen transfer.
Mortalidad Perinatal de la Población afiliada a una EPS de Pasto. Departamento de Nariño[43]	2015	-	Risk factors: tobacco; alcohol; absent/ inadequate prenatal care. Related conditions: complications of pregnancy; compromised oxygen transfer; maternal illnesses.

To be continued

Chart 1

Title	Year	Attributes	Antecedents
Complicações maternas em gestantes com idade avançada[44]	2012	-	Risk factors: tobacco and absent/inadequate prenatal care. Related conditions: complications of pregnancy; impaired glucose metabolism; compromised oxygen transfer; maternal illnesses.
Embarazo de alto riesgo[45]	2012	-	Risk factors: drugs; alcohol; obesity. Population at risk: low education level and economically disadvantaged. Related conditions: compromised oxygen transfer and maternal illnesses.
Prevalence and profile of adverse drug reactions in high-risk pregnancy: a cohort study[46]	2019	-	Related conditions: impaired glucose metabolism; maternal illnesses; medication regimen.
Maternal near miss determinants at a maternity hospital for high-risk pregnancy in northeastern Brazil: a prospective study[47]	2018	-	Risk factors: absent/ inadequate prenatal care. Population at risk: low education level and increased maternal age. Related conditions: compromised oxygen transfer; maternal illnesses; complications of pregnancy.
High risk pregnancy associated perinatal morbidity and mortality: a second birth population-based survey in Huai'an in 2015[48]	2019	Symbiotic maternal-fetal relationship.	Population at risk: low education level and increased maternal age. Related conditions: maternal illnesses and complications of pregnancy.
Complications and pre-existing diseases in pregnant women with Diabetes mellitus[49]	2019	-	Risk factors: obesity and tobacco. Population at risk: increased maternal age and preeclampsia in previous pregnancy. Related conditions: impaired glucose metabolism and maternal illnesses.
Gestational diabetes and pre-natal assistance at high risk[50]	2019	-	Risk factors: overweight; obesity; absent/ inadequate prenatal care. Population at risk: increased maternal age. Related conditions: impaired glucose metabolism and maternal illnesses.

To be continued

Chart 1 (concluded)

Title	Year	Attributes	Antecedents
Analysis of neonatal mortality risk factors in Brazil: a systematic review and meta-analysis of observational studies[51]	2019	Maternal-fetal bond.	Risk factors: absent/ inadequate prenatal care. Population at risk: low education level and increased maternal age. Related conditions: complications of pregnancy.
Influence of maternal age in perinatal conditions In live births of São Luís, Maranhão[52]	2020	-	Risk factors: absent/ inadequate prenatal care. Population at risk: low education level and increased maternal age.

Chart 2 - Exemplification of the model case of the "maternal-fetal dyad" concept, 2020

Model case
R.D., 31 years old, primigravida, starts prenatal consultations at eight weeks of gestation with the purpose of maintaining an efficient monitoring and quality assistance for the maternal-fetal dyad. Although she perceives herself to be healthy, she worries about pregnancy risk factors, as she is aware of the symbiotic maternal-fetal relationship. In prenatal consultations, R.D. increases the knowledge about the well-being of the dyad, as she starts to realize how essential the bond between her and her child is to maintain the physiological exchange and the good quality of affective-emotional interactions during the gestational period.[16].

Chart 3 - Exemplification of the contrary case with antecedents that affect the maternal-fetal dyad, 2020

Contrary case
M.V. is a 36-year-old primigravida and starts labor at 28 weeks of gestation due to complications of pregnancy. She reports not having had prenatal care, complains of headache, epigastric pain and is concerned about the well-being of the child. The nurse performs fetal monitoring, obtains the vital signs of M.V and checks the presence of protein in the urine, to observe the presence or absence of maternal and fetal complications. Blood pressure is 170/98 mmHg and proteinuria is observed in the Labstix test (2+). The nurse identifies the potential for pre-eclampsia and subsequent fetal hypoxia, which can lead to compromised maternal and fetal health. M.V. claims that she had headaches throughout her pregnancy. The nurse, as well as the doctor, discusses this situation with M.V., providing information about her condition that contributes to the risk for disturbed maternal-fetal dyad and the potential adverse effects on her health and that of her child[16].

DISCUSSION

It is observed in the model case how the concept "maternal-fetal dyad" is defined through the attributes found in the literature. Meanwhile, it is observed how the concept cannot be defined in the contrary case. There are antecedents that affect the maternal-fetal dyad, among them: increased maternal age, absent prenatal care, premature labor, preeclampsia, proteinuria and compromised oxygen transport to the child. These complications of pregnancy caused maternal and fetal losses, resulting in the risk for disturbed maternal-fetal dyad[44-45].

The attributes of the "maternal-fetal dyad" concept that stood out in literature were: maternal-fetal bond and symbiotic

maternal-fetal relationship. The NANDA-I's definition for the diagnosis under study is "at risk for disruption of the symbiotic maternal-fetal dyad as a result of comorbidity or pregnancy-related conditions"[4]. Therefore, it is suggested that the definition needs to be more consistent considering the impairment of physiological exchange and affective-emotional interactions: "at risk for disruption of the symbiotic maternal-fetal dyad as a result of comorbidity or pregnancy-related conditions".

Negative pregnancy outcomes are strongly influenced by risk factors. Such risk factors trigger problems during pregnancy, making the mother and fetus vulnerable to complications and morbidities[44-52].

The NANDA-I "substance abuse" risk factor was identified as tobacco, drugs and alcohol. These factors during pregnancy generate compromised health for the woman and the fetus and are related to the etiology of premature birth, spontaneous abortions and fetal malformations[45]. It is noteworthy that in Brazil, in 2016, the estimated prevalence of the use of these substances during pregnancy was 1.45% for drugs, 22.32% for alcohol and 4.22% for tobacco[53]. It is observed that alcohol is the most prevalent in pregnancy.

"Absent/inadequate partner support" and "absent/inadequate social support" risk factors were also found in nursing literature, but they are not included in the NANDA-I taxonomy. According to nursing literature, lack of support and non-acceptance of the partner during pregnancy are the leading causes of symptoms of depression. Approximately 10% of pregnant women have symptoms of depression, mild or moderate, which can interfere with fetal development and increase risks to both the health of the mother and the fetus[41]. In Brazil, there were 25% of pregnant women with depression in 2017%[53].

Analysis of the elements of the ND allowed identification of other risk factors that are not included in NANDA-I: overweight, obesity and low gestational weight gain. It is known that the altered maternal weight is one of the contributors for the development of complications of pregnancy, since the maternal nutritional status before and during pregnancy has a significant influence on maternal health and fetal development[42]. In Brazil, in 2017, 26.55% of pregnant women were overweight, 15% were obese and 17.34% were underweight[53].

Overweight and obesity are increasingly present in pregnancy and can lead to gestational diabetes, pre-eclampsia, fetal mortality, congenital malformations, premature birth, macrosomia and polyhydramnios. Low maternal weight can restrict fetal growth[42].

As for the risk factor "absent/inadequate prenatal care", NANDA-I only mentions the term "inappropriate", when it should also include the term "absent", as mentioned in nursing literature, since in 2016, in Brazil, 551,369 pregnant women had an inadequate number of prenatal consultations and 15,636 pregnant women did not attend them[53]. Absence or difficulty in accessing prenatal care may be related to socioeconomic, accessibility, quality of care and social support, maternal age, alcohol and other drugs, multiparity, non-acceptance of pregnancy, lack of family support and lack of connection with health services factors. It should be noted that failure to perform prenatal care can directly affect maternal and/or fetal health[53].

It should be noted that NANDA-I does not present, for the diagnosis under study, the clinical indicator "population at risk". However, in this conceptual analysis, five population at risk were identified: increased maternal age; preeclampsia in previous pregnancy; unintended pregnancy; low education level and economically disadvantaged. These populations are more likely to develop the diagnosis of risk for disturbed maternal-fetal dyad[44,53].

Women who do not plan pregnancy, as well as pregnant women who have low education level and/or low socioeconomic status, are also susceptible to unfavorable pregnancy outcomes, such as pre-eclampsia, premature labor and low birth weight, a once compromise maternal-fetal bond[41,53].

Pregnant women with increased maternal age (≥ 35 years old) are more predisposed to maternal and fetal morbidity and the risk of maternal mortality[44]. Furthermore, they have greater complications of pregnancy such as gestational hypertension, gestational diabetes mellitus, premature labor, placenta previa or abruption, premature rupture of membranes, and multiple gestations. In Brazil, in 2010, 299,372 women aged 35 and over got pregnant. In 2016, this value increased by 22.14%, which is equivalent to 384,496 pregnant women with increased maternal age[53].

The results of this review mentioned that gestational risk is observed in women with increased maternal age, however early maternal age can be a determining factor for gestational risk[44-45].

Concerning related conditions, which are not changeable by nurses, six were found in nursing literature. Among them, diseases and maternal conditions are not included in the taxonomy, which threatens 20% of pregnancies, making them at high risk. Such diseases and maternal conditions are pre-existing hypertension, depression, dyslipidemia, systemic inflammation, vitamin D deficiency, maternal infections, autoimmune diseases, thyroid dysfunction and endometriosis. They cause complications of pregnancy, namely: hemorrhages, pre-eclampsia, unfavorable obstetric results, restriction of fetal development, premature birth, macrosomia, placenta previa, spontaneous abortion, fetal death, among others[52].

The elements evidenced in the literature will assist nurses in the correct identification of the ND and in advising pregnant women about the potential problems that may arise during the gestational period. Complications of pregnancy have important long-term implications for both the health of the mother and the health of the child[52]. Nurses must also appropriate this knowledge in the decision-making process and in carrying out specific care for high-risk pregnant women. The correct identification of the factors responsible for the risk for disturbed maternal-fetal dyad favors the subsequent implementation of preventive and health promotion actions capable of intervening in complications of pregnancy[51-52].

In the time frame used for this research, no studies were found in the literature that addressed the analysis of the risk concept of disturbed maternal-fetal dyad. There are only studies that cite the diagnosis in question in high-risk pregnant women.

Study limitations

As limitations of the research, it has been that the concept may be implicit in the literature, as well as unnecessary defining attributes and antecedents may have been included, establishing barriers for an effective analysis. Furthermore, conceptual analysis requires interpretation, which may reflect the researcher's subjectivity.

Contributions to nursing

This study contributes to language development in the nursing field by identifying the risk factors of the laughing population and the related conditions of the ND risk for disturbed maternal-fetal dyad; this occurred in the context of high-risk pregnancy for the use of appropriate terminology; and this is indispensable for professional nursing practice.

CONCLUSION

The concept analysis allowed to identify the attributes and antecedents of the maternal-fetal dyad concept in high-risk pregnancy in the established time frame, raising and clarifying ideas. It was possible to identify 12 antecedents that are not included in NANDA-I. There was a need to review the definition of the diagnosis proposed by the taxonomy.

Further studies are recommended, especially in nursing, on understanding the concept, as most articles that met the inclusion criteria come from other field of health. It is necessary to review the risk factors; new components of the diagnosis proposed by the taxonomy (related conditions and populations at risk); conducting content analysis by experts so that experts can corroborate or not the results identified in this concept analysis. The diagnosis review will support a better direction in nursing care for pregnant women through actions to prevent diagnostic risk factors.

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