Development of a screening instrument to assess breastfeeding in the first 48 hours

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Abstract

Objectives: develop a screening tool (AMA-48) to assess the risk of the mother-baby dyad not progressing positively in exclusive breastfeeding within the first 48 hours of hospital admission.

Methods: this methodological study was carried out in a child-friendly hospital located in the interior of the Northeast Region of Brazil, between July2019 and August 2020. The study followed the following phases: 1) search in the literature to reformulate the construct; 2) restructuring of the construct and instrument; 3) content validation through evaluation by a committee of experts.

Outcomes: the literature search resulted in the selection of ten documents. From these, the objective and structure of the instrument were defined, generating a structured questionnaire (11 items). Twenty-two experts considered 64% of the items "adequate". After reformulating and reevaluating the instrument, it was considered objective (85%), clear (90%) and relevant (95%). In the end, the instrument obtained a satisfactory overall average Content Validity Index of 0.88 (0.05) and included variables related to the unfeasibility of exclusive breastfeeding, maternal and neonatal anthropometry and breastfeeding difficulties, classifying the dyad at usual, medium and high risk.

Conclusion:a tool with content validity was obtained, developed for low complexity services, which indicates the risk of the dyad not continuing exclusive breastfeeding.

Key words *Evaluation study, Breastfeeding, Validation study, Lactation, Exclusive breastfeeding*

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Introduction

The benefits of breastfeeding for both mother and newborn are well described in the literature. However, early weaning rates are still high.[1] The National Survey on Child Nutrition (ENANI – Portuguese acronym), carried out in 2019, reveals that 62.4% of newborns were breastfed in the first hour of life. However, the prevalence of continuity of Exclusive Breastfeeding (EBF) is reduced to 59.7% and 45.6%, respectively, in nursling children under four and six months, respectively.[2]

Several factors influence these results, such as multiparity, maternal age and the lack of professional support to EBF in the nursling children's first hour of life.[3]In the latter, the health professional has a key role, since during immediate puerperium the care provided to both women and newborns is considered a predictor aspect for maternal and neonatal health. Thus, health professionals must know how to identify the needs of each patient in order to provide adequate and assertive care.[1-5]

The "UNICEF Breastfeeding Observation Protocol" is considered gold standard for the assessment of the performance of mothers and newborns during breastfeeding.[6] Nevertheless, we do not have access to a screening tool focused on the identification of the risk of the non-occurrence of EBF in the first hours of contact between mother and newborn. The use of screening tools helps with the identification and/or early diagnosis, favors the targeting of care and mitigates complications and costs for the healthcare system.[6,7] Due to cultural diversities and multiple factors that affect breastfeeding, the researchers continued to develop questionnaires, scales and forms that assess the mother-baby dyad during breastfeeding.[6-8]

This study demonstrates, with methodological details, the early development and validation of the content of a screening tool for the assessment of breastfeeding and identification of the risk of difficulties of the binomial impair EBF, called AMA-48. The objective was to describe the stages of elaboration and validation of content for the building of a valid instrument to be used in clinical practice by any health professional who acts in breastfeeding.

Methods

Methodological research,[9] which involved the development of a screening tool called AMA-48. The objective of the tool was to identify, in a quick and valid manner, the risk of EBF deprivation in puerperal women and their respective newborns. This research was carried out in a hospital located in the countryside of the Northeast of Brazil. The hospital is fully public and certified as "baby-friendly", since it meets criteria that consider prepartum, partum and postpartum adequate care for mothers and newborns. The execution of the project occurred in the period between July 2019 and August 2020. The Nutrition department of the hospital is composed of four nutrition professionals with experience in mother-and-child nutrition. With the objective of improve the assistance provided to mothers and newborns, these professionals developed a tool composed of ten items, which classifies the risk of difficulties in breastfeeding in the first 48 hours after birth. With the aim of making this tool assertive, robust and scientifically adequate, this article used quantitative and qualitative methods for the building of AMA-48. The stages of the validation process in which the initial form went through were: (1) Literature research; (2) Restructuration of the construct and tool; (3) content validation by means of a committee of experts (Figure 1).

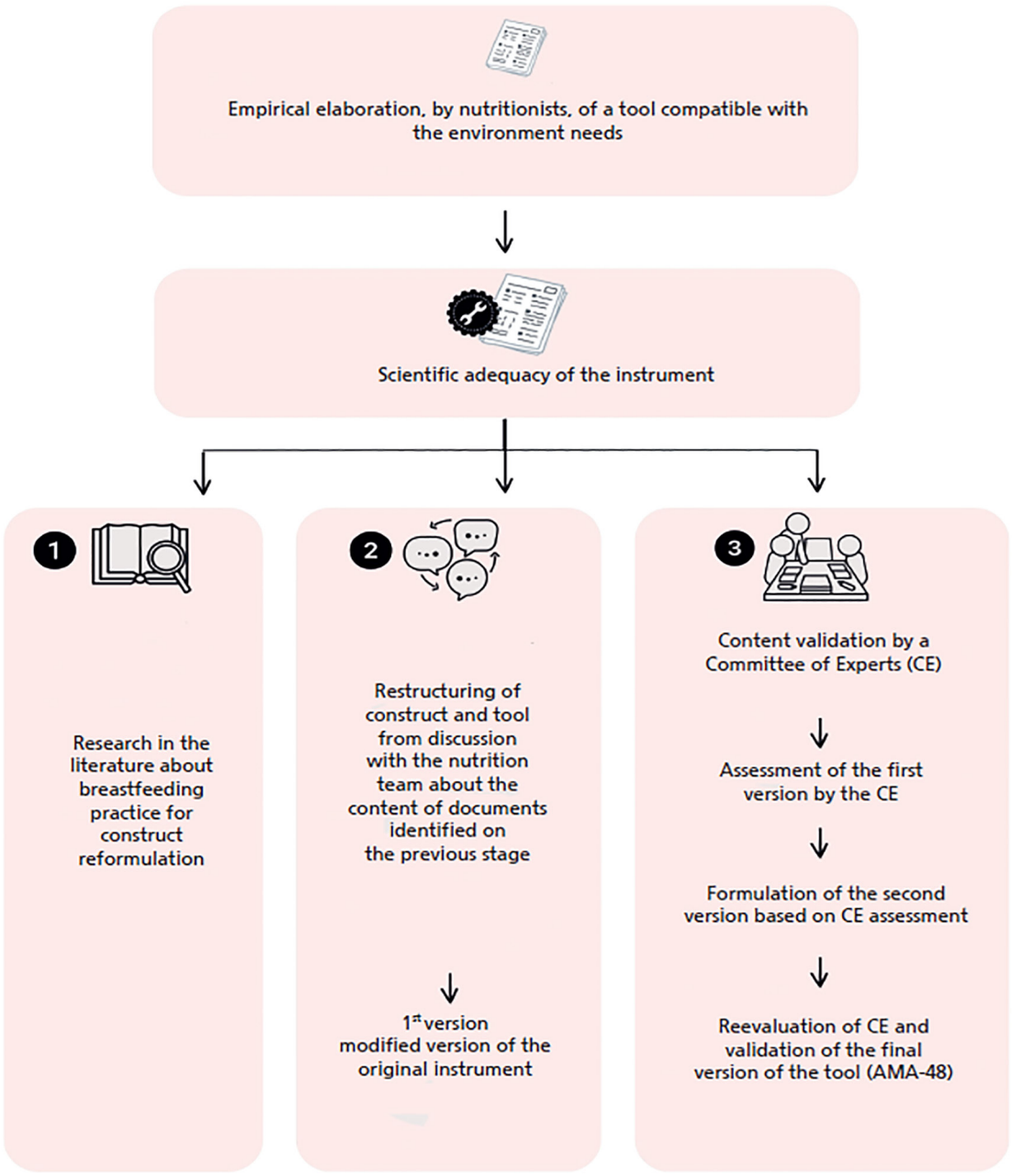
The first stage of this study involved a document research in the literature in order to reformulate the construct. For that, the combination of Boolean operators with terms related to breastfeeding, generating the following strategy: (pregnant) OR (parturient) AND (exclusive breastfeeding) OR (early weaning) OR (newborn) AND (guidelines) OR (documents). It was applied to the search for registries in the following databases: Medline, Lilacs and Google Scholar. Documents available for free were included, being official or emitted by public departments such as municipal and state health secretariats and/or Brazilian Ministry of Health, besides documents developed for professional and public guidelines: health booklets, protocols, guide for professionals and handbooks about breastfeeding.[10-19] This choice is justified for the fact of these documents are developed considering a reflexive thematic analysis of a group of professionals and/or a society of experts about the available evidence, besides they reach a broad approach on the theme.

Registries such as clinical essays, observational studies, publications in annals and literature reviews were excluded for having a higher risk of bias, heterogeneity of results, and, occasionally, not approaching the theme according to the objectives of the research. The research was limited to public documents in Portuguese, considering that health professionals can easily consult Brazilian official documents and the guides and manuals that orientate public policies are written in this language. The objective of the search was to locate all documents of the mother-and-child area concerning breastfeeding. All registries found were organized with Excel software, sorted by title and abstract. Posteriorly, an integral reading was performed in order to identify which documents would be used in the following stage.

In the second stage, the objective was the restructuring of the construct and the tool. This stage counted on the participation of all of the four nutritionists of the service. The

Figure 1

Stages of the questionnaire validation process. Santa Cruz, RN, Brazil, 2020.



meeting was guided by a brainstorming strategy, in which the researchers used registries found in the previous stage, aiming to encourage the researchers to perform reflexive discussions about the hospital service and obtain answers to the questions that guided the purpose and structure of the instrument, including answer options and item scoring. Four meetings were performed with these professionals for the restructuring of the questionnaire. Each meeting had approximately four hours of length, and they were registered by means of written notes. Each professional made her own observation about the tool and could suggest modifications, which were discussed and approved by the entire group. Thus, the questionnaire was restructured, generating a new version.

The third stage comprised the content validation by means of the assessment by the committee of experts following the Delphi method and considering the level of agreement of the evaluators. Accordingly, in order to obtain a broader analysis of the questionnaire, we invited 30 professionals of several areas of knowledge, with minimum experience of two years in mother-and-child health. Fehring[20] suggests a universe of ten to 25 professionals at this stage.

Of 30 professionals, 22 experts agreed to participate in this stage. The professionals received, via email, a link for accessing the Free and Informed Consent Form, elaborated with the Google Forms platform. After accepting to participate in the research, each professional responded to the identification questionnaire, and, posteriorly, assessed the tool. For this assessment, each item was judged by the professional as "adequate" or "inadequate", the latter being justified by the participant. The reliability of the assessments of participants was performed with the Cronbach's alpha coefficient. The level of agreement of the professional's assessments was analyzed by means of the Content Validity Index (CVI), general and per item (I-CVI), and thus we determined which questions and/or alternatives of answer would remain in the tool or be modified. The I-CVI means were used to calculate the general CVI. The I-CVI means were obtained from the ratio between the number of experts that considered the item "adequate" and the number of professionals that responded to the assessment.

The assessment of items follows the guidelines of Polit and Beck[9] (I-CVI ≥ 0.78) and Lynn,[21] by means of the application of the scale of relevance of the item. This scale is an alternative to minimize the limitations of the I-CVI technique, which consists of the assessment of the item in relation to its relevance, considering a scale of one to four points (one point = non-relevant item; two points = impossible to assess the relevance without a review of the item; three points = need a brief review of the item; 4= relevant item), recommended by Lynn.[21]

Accordingly, the I-CVI ≥ 0.78 items with a score in the assessment scale ≤ two points were excluded and I-CVI ≥ 0.78 items and score in the assessment scale ≥ were modified. Still, the professionals judged the overall scoring and classification at the end of the AMA-48 application.

Items with values higher than 0.78, even without necessity of adjustment, were modified when the observations were considered relevant by the professionals for the evaluation of the modifications performed. Finally, the experts also performed a global assessment of the tool and responded about its objectivity, clarity and pertinence. This study was approved by the research ethics committee, according to the 466/2012 resolution, with approval number 3.065.138.

Results

The first stage (literature research for reformulation of construct), the research in databases found 6174 documents (Medline = 2698; Lilacs = 401; Google Scholar = 3075). We excluded 28 duplicates. After screening title and abstract, we excluded 6126 registries, remaining 20 registries. After full reading and evaluation of eligibility criteria, ten documents were used to base the discussions of the second stage (Table 1). The other documents were excluded for being literature reviews (4) and observational studies (6).

For the second stage (restructuration of construct and tool), the main aspects pointed by the nutritionists during the discussion of the tool were inspirations for its structure, which included the already consolidated scales such as the Screening Tool for Risk on Nutritional status and Growth (Strong Kids) and Subjective Global Assessment (SGA). Yet, the participants discussed the flow of application of the tool and agreed that the tool should have few questions of fast applying and present immediate results. The construct items that were presented and discussed with professionals are described in a supplemental document. The debate resulted in the definition of the objective of the instrument, which was: "to identify the mother-baby dyads that presented risk of not evolving in exclusive breastfeeding in the first 48 hours in hospital unit". The professionals defined the concept of "screening" as "a tool applied quickly, indicating the risk level in the end without necessarily including physical assessment of patients" and concluded that the tool should be applied in mother-baby dyads, however in a hospital environment, by any health professional.

With regard to the questionnaire analysis, the item "maternal identification" included the mother's name, type of delivery and maternal age (years). When discussing type of delivery, alterations were made in the score of the alternatives. It was considered the physiological difference in breast milk production between the situations of cesarean and vaginal delivery. For the "chronological maternal age", the age range that differentiate adolescents and adults was standardized according to the World Health Organization.[13] The Basic Care Journal[12] preconizes that pregnant women older than 36 years are considered at risk for pregnancy. Accordingly, the situations of gestational risk: pregnant adolescents and pregnant women older than 36 years would also be scored. The item "maternal comorbidities" excluded open-ended questions and alternatives considered ambiguous. This motivated the restructuring of the item and corroborated the objective of the questionnaire when identifying situations that may make the EBF unfeasible.

The item "digestive tolerance" was excluded for being considered inadequate for the questionnaire. The "diet acceptance" was considered a necessary factor for the production of breast milk. The alternatives of items were altered for "satisfactory" or "unsatisfactory", in order to make the answer more objective and exclude the open-ended option. Assuming that nutrition affects breastfeeding, the nutritionists maintained the items

Table 1

Description of documents found and their application in the redesign of the tool. Santa Cruz, RN, Brazil, 2020.

Document	Application
Pregnant and Puerperal women Healthcare in SUS-SP – Technical Prenatal and Puerperium Manual (2010)[10]	Consulting puerperium care
Women healthcare in prenatal, puerperium and newborn care (2017)[11]	Consulting health professional attributions and puerperium consultations
Newborn Healthcare: Guide for Health Professionals(2014)[14]	Definition of BF, identification of difficulties with EBF, Rooming-in care and NB care
Basic Care Journal - Breastfeeding and Supplemental ؚing (2015)[13]	Definition and type of milk feeding
	Deepening into breastfeeding technique and breast milk production;
	Identification of situations in which breastfeeding is restricted;
	Survey on the manners of prevention and handling of the main problems related to breastfeeding
Basic Care Journal - Low Risk Prenatal Care(2012)[12]	Identification of factors that stand as risks to pregnancy
Child-Friendly Hospital Initiative: reviewed, updated and expanded to integrative care (2009)[15]	Identification of practices that help in the promotion of EBF;
of Procedures: Prevention and Treatment of Mammary Intercurrences of Manual Breastfeeding (1998)[16]	To identify important care that avert early weaning;
Technical Manual - Prenatal and puerperium qualified and humanized care(2006)[17]	Knowledge of most frequentintercurrences and organization of puerperium healthcare
Birth, Abortion and Puerperium: Humanized Assistance to Women(2001)[18]	Consult to immediate assistance to newborn, puerperal women and maternal HIV situations;
Children Health: Infant Nutrition - Breastfeeding and Supplemental Feeding (2009)[19]	Main problems that may occur during breastfeeding

BF= Breastfeeding; EBF=Exclusive Breastfeeding; HIV= Human Immunodeficiency Virus; NB= Newborn; SUS-SP (Portuguese acronym) = Unified Health System - São Paulo.

related to the assessment of maternal nutritional status, with alterations in the answer options.

The three options referring to breastfeeding (from the initial questionnaire) were compiled in the item "complications" and added to other answer options already described in the literature. The physical evaluation of breasts was excluded from the questionnaire in order to avoid discomfort to patients, considering, however, that it could be necessary in future stages, depending on the risk the dyad presents.

We elaborated a new item called "neonatal alteration", referring to the physical, metabolic and neurological alterations the newborn may demonstrate. The professionals also considered some babies to have more difficulties that lead to early weaning, therefore, the conditions of birth and its reference values were included. The tool that used to generate an independent score for each subject of the mother-baby dyad was unified in the new proposal. For the answer alternatives scoring, we determined that extreme situations would present the highest value, whilst the lowest scoring would be attributed to quotidian problems. Thus, the defined scoring varied from 0 to 7 points for "habitual risk", 8 to 10 points for "average risk" and ≥ 10 points for "high risk". The team discussed this classification considering the profile of the mother-baby dyad, which each risk could present, based on the scoring of each item and associating it to observations of the clinical practice.

These modifications resulted in the first version of the questionnaire (Figure 2), a structured tool containing 11 items, denominated Screening Assessment Tool for Breastfeeding in the first 48h (AMA-48)." Each item possessed answer options with scores from zero to two, which are added along the questionnaire. The final score classifies the mother-baby dyad in habitual, average or high risk.

For the third stage (content validation by means of the assessment of a committee of experts), the committee with 22 experts was built, composed of eight nurses, four nutritionists, three physiotherapists, three pediatricians, two social workers, one psychologist and one speech therapist. In general, 17 (77%) professionals had specialization and five (23%) had master degrees. The average length of qualification of the experts was 13 years, and the experience, 4.5 years.

The AMA-48 tool, adjusted according to previous stages, was discussed with the experts. In the first assessment, the AMA-48 was considered objective (61%), clear (76%) and pertinent (90%) by the experts. The tool had a mean general satisfactory CVI of 0.80 (0.05). The description of the evaluation of each question and I-CVI is presented in Table 2. It was observed that nine (64%) of the judged items were considered adequate.

The item "Situations that hinder exclusive breastfeeding" obtained the lowest CVI = 0.59. In this item, nine experts classified the item as "inadequate". In

Figure 2

First version of the instrument after discussion with the nutritionists. Santa Cruz, RN, Brazil, 2020.

Screening tool for assessment of breastfeeding in the first 48h – AMA-48

Name of patient:		Sector:	Bed:
Parity:		Date:	Professional:
Situations that make exclusive breast-feeding unfeasible	☐ HIV ☐ HTLV 1 ☐ HTLV 2 ☐ Varicella (with vesicle) ☐ CMV (vesicles in breast) ☐ Mental disorder ☐ acute phase or with nipple bleeding) ☐ Use of contraindicated medicine during breastfeeding ☐ Use of licit and illicit drugs ☐ Maternal refusal ☐ Alteration of maternal clinical status ☐ None		
1. Age	☐ ≤ 18 years ☐ 19 to 35 ☐ ≥ 36 years		
2. pre-pregnancy nutritional status	☐ Low weight ☐ Adequate ☐ Overweight ☐ Obesity ☐ No registry		
3. Current nutritional status	☐ Low weight ☐ Adequate ☐ Overweight ☐ Obesity ☐ No registry		
4. Type of delivery	☐ Cesarean ☐ Vaginal		
5. Diet acceptance (After released diet)	☐ Satisfactory ☐ Unsatisfactory		

6. Urine characteristics	☐ Hematuria ☐ Clear yellow ☐ Dark yellow
7. Intercurrences	☐ Difficulty of latch ☐ Difficulty of suction ☐ Respiratory distress ☐ None
8. Apgar	1º min: ☐ 8 to 10 ☐ 5 to 7 ☐ < 5 5º min: ☐ 8 to 10 ☐ 5 to 7 ☐ < 5
9.1. Birth weight	☐ ELBW (< 1,500 kg) ☐ LBW (< 2,500 kg) ☐ Adequate (> 2,500 kg) ☐ Macrosomia (> 4,000 kg)
9.2. Gestational age	☐ Preterm (< 37 weeks) ☐ Term (≥ 37 weeks) ☐ Post Term (42 weeks)
9.3. Weight/Gestational age	☐ SGA ☐ AGA ☐ LGA
10. Neonatal alteration	☐ Neurological ☐ Metabolic ☐ Congenital anomalies ☐ Facial asymmetry ☐ None
11. Current breastfeeding status	☐ EBF ☐ MBF

HIV= Human Immunodeficiency Virus; HTLV 1 = Human t-cell Lymphotrofic virus type 1; HTLV 2 = Human t-cell Lymphotrofic virus type 2; CMV= cytomegalovirus; ELBW= Extremely Low Birth Weight; LBW= Low Birth Weight; SGA= Small for Gestational Age; AGA= Adequate for Gestational Age; LGA= Large for Gestational Age; EBF= Exclusive Breastfeeding; MBF= Mixed Breastfeeding.

Table 2

Content Validity Index for items of the tool according to assessment of experts, Santa Cruz, Rio Grande do Norte, Brazil, 2020.

Question	Answer options	1st Assessment of Validity Content Index per item(I-CVI)	Action	2nd Assessment of Validity Content Index per item (I-CVI)
Situations that made exclusive breastfeeding unfeasible	☐ HIV ☐ HTLV 1 ☐ HTLV 2 ☐ Varicela (with vesicle) ☐ CMV (with vesicles in breasts) ☐ Mental disorder ☐ Chagas disease(acute stage or with nipple bleeding) ☐ Use of contraindicated medicine during breastfeeding ☐ Use of licit or illicit substances ☐ Maternal refusal ☐ Alteration of maternal clinical status ☐ None	0.59	Answer options were modified	0.82
1. Age	☐ ≤ 19 years ☐ 20 to 35 ☐ ≥ 36 years	0.82	Item maintained	0.82
2. Pre-pregnancy nutritional status	☐ Low weight ☐ Adequate ☐ Overweight ☐ Obesity ☐ No registry	0.77	The scoring of answer options was modified	0.82
3. Current nutritional status	☐ Low weight ☐ Adequate ☐ Overweight ☐ Obesity ☐ No registry	0.77	The scoring of answer options was modified	0.82
4. Type of delivery	☐ Cesarean ☐ Vaginal	0.86	Item maintained	0.86
5. Diet acceptance (After released diet)	☐ Satisfactory ☐ Unsatisfactory	0.77	Item maintained	0.91
6. Urine characteristics	☐ Hematuria ☐ Clear Yellow ☐ Dark Yellow	0.68	Item excluded	
7. Intercurrence	☐ Difficulty of latch ☐ Difficulty of suction ☐ Respiratory distress ☐ None	0.91	The scoring of answer options was modified	0.91

8. Apgar	1º min: ☐ 8 to 10 ☐ 5 to 7 ☐ < 5 ☐ 5ºmin: ☐ 8 to 10 ☐ 5 to 7 ☐ < 5	0.95	Item maintained	1.00
9.1. Birth weight	☐ ELBW(< 1,500 kg) ☐ LBW (< 2,500 kg) ☐ Adequate (> 2,500 kg) ☐ Macrosomia (> 4,000 kg)	0.82	Item maintained	0.95
9.2. Gestational age	☐ Preterm (< 37 weeks) ☐ Term (≥ 37 weeks)	0.82	Item maintained	0.95
9.3. Weight/ gestational age	☐ SGA ☐AGA ☐LGA	0.82	Item maintained	0.86
10. Neonatal alteration	☐Neurological ☐Metabolic ☐ Congenital anomalies ☐ Facial asymmetry ☐ None	0.77	Item maintained	0.86
11. Current breastfeeding situation	☐ EBF ☐ MBF	0.77	Item maintained	0.91

HIV= Human Immunodeficiency Virus; HTLV 1 = Human t-cell Lymphotrofic virus type 1; HTLV2 = Human t-cell Lymphotrofic virus type 2; CMV= cytomegalovirus; ELBW= Extremely Low Birth Weight; LBW= Low Birth Weight; SGA= Small for Gestational Age; AGA= Adequate for Gestational Age; LGA= Large for Gestational Age; EBF= Exclusive Breastfeeding; MBF= Mixed Breastfeeding.

the assessment of relevance of the item, most professionals (n=7) indicated the need for a small review and the other professionals (n=2) requested a broader review. Therefore, the item was not excluded, but reformulated and reevaluated. The term "mental disorder" was excluded from the answer options, observing that this situation can be challenged, and in this case, would not interfere with breastfeeding. The option "change of clinical status" was excluded for not being clear and the evaluators considered it inadequate for the question. The alternative "decision of not breastfeeding" was included in the item, assuming that breastfeeding is a choice for women. We observed that only three (13%) professionals did not consider the other answer options as factors that hinder EBF. However, these options were maintained, considering that they are based on official documents that approach the risk factors that hinder breastfeeding.[13] The items related to the pregnancy nutritional status (items two and three), were modified, since they obtained I-CVI = 0.77. The experts suggested including the answer option "no registry", considering that prenatal care might have not occurred or been insufficient, resulting in situations that would impair exclusive breastfeeding. At first, the item five "diet acceptance" had the objective to indirectly assess aspects that may influence breast milk production and was evaluated by the experts as adequate. The item six "urine characteristics"(I-CVI = 0.68) was excluded because we understood that this parameter does not reflect the hydration status of the patient, and, in this context, may generate bias. The item seven (intercurrence) had only modifications in its scoring, according to the suggestions of experts. Items eight and nine, as well as their sub-items (9, 9.1, 9.2 and 9.3) were not modified and presented satisfactory I-CVI.

The item "neonatal alteration" (I-CVI = 0.77) had the option "congenital anomalies" excluded and replaced by "facial alteration", considering that not every

congenital disease lead to difficulties in breastfeeding. It is also possible to include other situations related to malformations that may cause difficulties in EBF: cleft palate, cleft lip, facial hemangioma, among others.

There was only one suggestion of modification for "current breastfeeding situation", item 11 (I-CVI = 0.77). We proposed the inclusion of "milked EBF" in the answer options, since we consider that previous interventions may be executed to support breastfeeding. The score values along the tool and the risk classification did not receive any criticism or suggestions from the experts.

After the reformulation of items and new assessment by the experts, the mean general CVI was satisfactory (0.88±0.05), 85% of professionals agreed that the tool was objective, for 90%, it was clear, and for 95%, it was pertinent. The reliability of the expert's assessments was considered moderate (α-Cronbach = 0.54). These parameters indicate that the content and items that constituted the tool were approved by the experts.

In the general assessment, the initial tool was considered "good" by 45% of professionals, "very good" by 41% and "regular" by 14%. For 77% of experts, the tool met the proposed objective and 65% affirmed that they would not include any new questions.

Discussion

This study describes the formulation of AMA-48, a screening tool with multidisciplinary content validity, whose function was to identify the risk of the mother-baby dyad not evolve in the exclusive breastfeeding within the first 48 hours of hospitalization. In this context, occurs the need for hospital-based health services to use a "screening" system and "risk classification" in the assistance to patients in order to avert undesirable clinical outcomes.[22]

The concept of "triage" and "risk classification", defined by Ganley and Gloster,[23] refers to a dynamic process in which the patient is identified and conducted to the most adequate service, according to her need. This definition is similar, essentially, to those presented in the first step of our results. Besides, the nutritionists participating in that stage associated "triage" to the absence of physical contact, probably influenced by the concept of "nutritional triage", the latter a simple and effective tool, which does not require anthropometry to identify nutritional risks and indicate further conducts.[24,25]

AMA-48 indicates situations in which EBF is not feasible. According to the Basic Care Journal,[13] breastfeeding is contraindicated for women with HIV, HTLV 1 and 2 and specific medications. Given the above, the instrument considers several aspects to elaborate the risk level for not breastfeeding, one of the aspects being the maternal nutritional status. However not directly related to breastfeeding, weight excess may also delay lactogenesis, since it attenuates the response to prolactin in the first 48 hours of the postpartum.[26] Birth weight and the relation weight/gestational age are not factors recognized as directly influencing EBF non-adherence. However, according to Pinheiro *et al*.[27] over 79% of dietary supplements are prescribed for newborns that are large for gestational age and small for gestational age due to the low flow of breast milk. Thus, it is important being aware of these factors.

AMA-48 indicates three possible outcomes: *habitual risk*, *average risk* and *high risk*. The professionals should be aware of patients with habitual risks, since although they do not seem to face difficulties in the first hours, although they need support during the discharge, aiming to prevent early weaning. For patients with high and average risk of EBF deprivation, the interventions should be individualized, focusing on physical evaluation, orientation and intensive support. Amaral *et al*.,[28] when identifying factors that lead to weaning, drew attention to the importance of these actions and support to breastfeeding in the first weeks in order to achieve successful breastfeeding. Considering other tools of similar nature that act currently in Brazil, we mention the translation and validation of Breastfeeding Self-efficacy Scale,[29] composed of 27 items that assess maternal behavior in the face of breastfeeding in the self-efficacy perspective. Besides that, there is the Breastfeeding Assessment Scale (LATCH – Portuguese acronym),[30] which aims to systematically document the assessment of latch positioning, suction and deglutition during individual sessions of breastfeeding monitoring. These tools, sometimes, may not have the objective of triage the mother-baby dyad, attributing a risk for exclusive breastfeeding deprivation, according to what AMA-48 proposes.

This tool presents some limitations for having considered only national documents for its elaboration. Besides, the functional design of the instrument is similar to nutritional screenings, which reflects the professional qualification of the creators. Notwithstanding, this does not refer to nutritional risk for mother and baby, but for the chance the dyad has of not progressing into exclusive breastfeeding. It is worth highlighting that, during the third stage, the design of the tool was not criticized by expert professionals.

Another limitation of the study is the fact that AMA-48 was developed in an environment of low risk maternity, which limited our results. It was not possible to ensure the accuracy of the tool in contexts that attend complex dyads. In this regard, however the tool identifies situations in which EBF is unfeasible, galactosemia was the only

neonatal condition, according to the Basic Care Journal,[13] not included in AMA-48. This occurred due to the fact that the diagnosis of metabolic diseases frequently occurs after 48 hours of life. Accordingly, in these cases and other severe clinical complications, the newborns are referred to intensive care units, which makes AMA-48 application not recommended in this context.

Among several manners of validating an instrument, this study relied on the content validation by means of a committee of experts. However, it is understood that structural validations, with statistical accuracy to assess outcomes, reliability and reproducibility for the target-group, should also be carried out in order to optimize the tool. Besides, surveys that develop methods of application of instruments in the process of professional-patient care, in order to evaluate its performance in practice are also necessary.

It is worth highlighting that this study produced a structured screening tool (Figure 3) with ten items comprising maternal, neonatal and breastfeeding

Figura 3

Final version of the AMA-48 instrument after the elaboration and content validation phases, Santa Cruz, Rio Grande do Norte, Brazil, 2020.

Screening tool for assessment of breastfeeding in the first 48h – AMA-48					
Name of patient:		Sector:		Bed:	
Parity:		Date:		Professional:	
Situations that make exclusive breastfeeding unfeasible*					
O HIV O HTLV 1 O HTLV 2 O Varicella (with vesicle) O CMV (with vesicles in breasts)		O Chagas disease (acute phase or with nipple bleeding) O Use of contraindicated substance and/or medicine during breastfeeding O Decision of not breastfeeding O None			
*** Screening should be maintained only if the patient does not present any of these situations.**					
1. Age	O≤ 19 years (1 point)	O20 to 35 (0 point)	O≥ 36 years (1 point)		
2. Pre-pregnancy nutritional status	O Low Weight (1 point)	O Adequate (0 point)	O Overweight (1 point)	O Obesity (1 point)	O No registry (1 point)
3. Current nutritional status	O Low Weight (1 point)	O Adequate (0 point)	O Overweight (1 point)	O Obesity (1 point)	O No registry (1 point)
4. Type of delivery	O Cesarean (1 point)	O Vaginal (0 point)			
5. Diet acceptance (After released diet)	O Satisfactory (0 point)	O Unsatisfactory (1 point)			
6. Neonatal intercurrences	O Difficulty of latch (1 point)	O Difficulty of suction (1 point)	O Respiratory distress (1 point)	O None (0 point)	
7. Ápgar – 1º min.	O 8 to 10 (0 point)	O 5 to 7 (1 point)	O< 5 (2 points)		
7. Ápgar – 5º min.	O 8 to 10 (0 point)	O 5 to 7 (1 point)	O< 5 (2 points)		
8. Classification: 8.1. Birth weight	O ELBW (< 1000 kg) (2 points)	O LBW (< 2500 kg) (1 point)	O Adequate (> 2500 kg) (0 point)	O Macrosomia (> 4000 kg) (1 point)	
8.2. Gestational age	O Pre term (< 37 weeks) (1 point)	O Term (≥ 37 weeks) (0 point)	O Post-term (42 weeks) (0 point)		
8.3. Weight/Gestational Age	O SGA (1 point)	O AGA (0 point)	O LGA (1 point)		
9. Neonatal Alteration	O Neurological (2 points)	O Metabolic (1 point)	O Facial Alteration (1 point)	O Facial asymmetry (1 point)	O None (0 point)
10. Current breastfeeding situation	O Regular EBF (0 point)	O Milked EBF (1 point)	O MBF (1 point)		
Risk evaluation for the binomial:		O habitual risk (0 to 7 points)	O average risk (8 to 10 points)	O high risk (> 10 points)	

HIV= Human Immunodeficiency Virus; HTLV 1 = Human t-cell Lymphotrofic virus type 1; HTLV 2 = Human t-cell Lymphotrofic virus type 2; CMV= cytomegalovirus; ELBW= Extremely Low Birth Weight; LBW= Low Birth Weight; SGA= Small for Gestational Age; AGA= Adequate for Gestational Age; LGA= Large for Gestational Age; EBF= Exclusive Breastfeeding; MBF= Mixed Breastfeeding.

dimensions,designed for application in low-complexity postpartum, within the first 48h. For this reason, AMA-48 may be useful in maternity hospitals of the entire national territory, which face overcrowded services or overloaded professionals, since it provides quick response when indicating the risk of the dyad not evolving positively in EBF. Developing countries or in similar contexts may follow the same methodological steps for elaboration and content validation in order to adapt it to their reality. The AMA-48 instrument has its content validated (CVI=0.86) and has objectivity, clarity and pertinence above 80% when assessed by experts of several qualifications with experience in the mother-and-child area.

We conclude that AMA-48 is a manner of encouraging the implementation of clinical screening routines for puerperal women and their newborns, contributing to an adequate assistance for the dyad to challenge difficulties of breastfeeding in the first 48h.

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Author's contribution

Araújo AC, Gomes SM and Sureira TM: conceptualization, formal analysis, surveys, validations, writing of the manuscript. Mendes ACL: conceptualization, surveys, writing of the manuscript. Castro GMMA, Amorim NCM, Guimarães PPM and Eufrásio REM: conceptualization, formal analysis, surveys, writing of the manuscript. All authors approve the final version of the article and declare no conflicts of interest.

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