UFSM

REUFSM
REVISTA DE ENFERMAGEM DA UFSM

ISSN 2179-7692
OPEN ACCESS

Rev. Enferm. UFSM, v.14, e6, p.1-17, 2024 •
Submission: 9/7/2023 • Acceptance: 1/17/2024 • Publication: 2/19/2024

Original article

Construction and validity of a form for transition of care for premature newborns

Construção e validação de um formulário para a transição de cuidados para o recém-nascido prematuro

Construcción y validación de un formulario para la transición de la atención al recién nacido prematuro

José Matheus de Melo Santos [I], Eliana Ofélia Llapa-Rodriguez [I], Maria do Socorro Claudino Barreiro [I], Rosemar Barbosa Mendes [I], Iellen Dantas Campos Verdes Rodrigues [II]

[I] Universidade Federal de Sergipe. São Cristóvão, Sergipe, Brazil
[II] Universidade Federal do Piauí, Floriano, Piauí, Brazil

Abstract

Objective: to construct and validate a form for transition of care for premature newborns. **Method:** a methodological study carried out in three steps: theoretical-methodological framework survey, semantic analysis and content validity, based on the instrument construction model and using the Delphi method, being considered approved when the Content Validity Index was greater than 80%. **Results:** the form consisting of six domains was approved after three rounds, with 64 items, and achieved a mean approval of 89%. **Conclusion:** the transition of care form was validated in terms of face and content, providing a new technology to be used for standardized and safe transition of information.
Descriptors: Patient Discharge; Continuity of Patient Care; Neonatal Nursing; Infant, Premature; Biomedical Technology

Resumo

Objetivo: construir e validar um formulário para a transição de cuidados com o neonato prematuro. **Método:** estudo metodológico realizado em três etapas: levantamento do referencial teórico-metodológico, análise semântica e validação de conteúdo, baseado no Modelo de Construção de Instrumentos e utilizando o método de Delphi, sendo considerado aprovado quando o índice de validação de conteúdo foi maior que 80%. **Resultados:** o formulário composto por seis domínios foi aprovado após três rodadas, com 64 itens e alcançou uma aprovação média de 89%. **Conclusão:** o formulário de transição de cuidados foi validado quanto

a face e conteúdo, disponibilizando uma nova tecnologia a ser utilizada para a transição de informações de forma padronizada e segura.
Descritores: Alta do Paciente; Continuidade da Assistência ao Paciente; Enfermagem Neonatal; Recém-Nascido Prematuro; Tecnologia Biomédica

Resumen

Objetivo: construir y validar un formulario para la transición de la atención al recién nacido prematuro. **Método:** estudio metodológico realizado en tres etapas: levantamiento del marco teórico-metodológico, análisis semántico y validación de contenido, con base en el modelo de construcción de instrumentos y mediante el método Delphi, considerándose aprobado cuando el índice de validación de contenido fue superior al 80%. **Resultados:** el formulario compuesto por seis dominios fue aprobado después de tres rondas, con 64 ítems, y alcanzó una tasa de aprobación promedio del 89%. **Conclusión:** el formulario de transición de atención fue validado en términos de apariencia y contenido, proporcionando una nueva tecnología para ser utilizada para la transición de información de forma estandarizada y segura.
Descriptores: Alta del Paciente; Continuidad de la Atención al Paciente; Enfermería Neonatal; Recien Nacido Prematuro; Tecnología Biomédica

Introduction

World statistics for the first decade of the 21st century show a continuous increase in the rate of prematurity. The percentage of preterm births worldwide jumped from 9.8% in 2000 to 10.6% in 2014, totaling around 14.8 million premature babies in 2014.[1] In Brazil, between 2012 and 2019, there was a variation from 10.87% to 9.95%, tending to fall during this period, but still maintaining a high rate compared to European countries (8.7%).[2]

There are many implications that a premature birth can have on a newborn's health, so the need for intensive care is expressed more frequently among preterm newborns (PTNB), as they are subject to health complications closely related to their growth and development, in addition to the association with morbidity and mortality in this population.[3] Considering the above, it is necessary to offer this care in Intensive Care Units (ICU) so that they can receive treatment until they are ready to be discharged.[4]

After hospitalization, PTNB must be directed to outpatient follow-up or basic care, where the child is monitored regarding their growth and development, with the aim of offering comprehensive and humanized care.[5] This premise is regulated according to

the Brazilian National Policy for Comprehensive Child Health Care, which states that every child coming from an ICU must begin their follow-up at the follow-up outpatient clinic and primary care.[6]

Therefore, it is essential that information regarding the health of this PTNB is conveyed during this shared care process between the networks involved, with a view to enabling continuity of care for these patients until two years of age.[7]

During transition of care, information regarding patient health is conveyed with the aim of enabling continuity of care at the next levels of health care. It is related to the principles of integration between health systems and consists of actions planned to guarantee continuity of care when there is a need to transfer between different locations of the same health service, or even between different health care levels.[8]

Carried out effectively, it presents favorable points, highlighting lower rates of hospital readmissions and a reduction in adverse events.[9] When ineffective, it causes harm to PTNBs' health, which can result in delays or errors in continuity of treatment, carrying out exams or tests in a repetitive and unnecessary manner, which can cause an increase in the period of outpatient follow-up, hospital readmissions and increased of health care costs.[10]

The use of transition of care forms is important in strengthening patient safety during transition of information, as it allows continuity of care between services based on a standardized and validated instrument.[11] A bibliographic survey carried out between February and March 2021 did not identify the existence of a tool that would assist the transition of standardized care in health services with a focus on PTNBs. The search carried out in the Virtual Health Library (VHL) using the keywords "transition of care" and "premature newborn".

Given the above, this absence makes it difficult to transmit patient information, which is an obstacle to continuity of care. Therefore, creating a tool with this perspective becomes a viable strategy to increase the security of this process.

The development and implementation of these strategies are capable of providing security in the process of transmitting health information.[11] Therefore, the objective was to construct and validate a form for transition of care for premature newborns.

Method

This is a methodological study carried out in three steps: theoretical-methodological framework survey and item construction, semantic analysis, and face and content validity. These steps corresponded to the theoretical procedures proposed by the instrument construction model, divided into six steps: 1 - Psychological system; 2 - Limiting properties of the study object; 3 – Dimensionality and internal structure and semantics definition; 4 - Construct definition; 5 – Item operationalization and construction; 6 – Item analysis.[12]

The first step proceeded with theoretical-methodological framework survey and item construction of the transition form, which corresponded to the first five steps of the theoretical procedures proposed by the instrument construction model. [12]

To this end, the starting point was to carry out a literature review and analysis of the material found with the identification of the elements considered important for creating the items to compose the neonatal transition of care form for premature newborns, which includes the first three steps of the theoretical procedures proposed by the instrument construction model.[12] Afterwards, the items to compose the form were constructed, being equivalent to the fourth and fifth steps of the theoretical procedures proposed by the instrument construction model. This step was carried out between July and September 2021.

The second step corresponded to carrying out semantic validity, with the objective of analyzing each of selectable items for composing the first version of the form, seeking to identify potential problems in understanding and accepting the terms to be used in the proposed items as well as analyzing whether the items would meet the needs during the transition of PTNBs. The items were analyzed for semantics by experts chosen through non-probabilistic sampling for convenience. The inclusion criteria for this step were having care experience in neonatology, working in Neonatal Intensive Care Units (NICU), or working in assistance aimed at outpatient follow-up of PTNBs.

The third step, carried out in September and October 2021, consists of face and content validity of the version approved in the previous step. It is noteworthy that the

second and third steps corresponded to step six of the adopted framework: item analysis.

In the second validity, experts chosen by intentional non-probabilistic sampling were invited. The inclusion criteria were having a PhD with a theme focused on neonatology or pediatrics, having Brazilian nationality, being a participant in a research group focused on neonatology/pediatrics. The deadline for answering was 21 days.

The search for experts eligible for the study was carried out on the *Lattes* Platform, using the "search CV" option, in which the following keywords were consulted: "pediatrics", "nursing" and "neonatology", selecting the "PhD" option, and with preference set for only CVs updated in the last 12 months. The search resulted in 38 experts who met the inclusion criteria, with 14 participating in the semantic validity step and 24 in the content validity step.

The collection instrument used was created on Google Forms, consisting of three parts: Informed Consent Form, participant identification, and form item presentation. It was organized into six sections: I. PTNB identification; II. Maternal and prenatal history; III. Birth/delivery data; IV. Hospitalization data; V. Data at discharge from the NICU; and VI. Post-discharge monitoring/follow-up.

The face and content validity assessment criteria were comprehensiveness, clarity, coherence, criticality of items, objectivity, scientific writing, relevance, sequence, uniqueness, and update.[12] Each section was analyzed and classified using a five-point Likert scale ("Totally Agree", "Partially Agree", "Neither Agree nor Disagree", "Disagree", "Totally Disagree").

Three rounds were carried out until reaching a degree of consensus greater than or equal to 80%. Each round lasted 21 days, with new analyzes ending at the end of the period. The collection period took place from August to October 2021. Data were tabulated and subjected to statistical analysis using the Content Validity Index (CVI), binomial test, Cronbach's alpha coefficient and Kendall's coefficient of agreement.

For validity, CVI was used in three ways: first, judges' agreement was obtained on each item, called I-CVI (Item-Level Content Validity Index); in the second step, the proportion of items that each expert agreed upon was calculated, called S-CVI (Scale-level Content Validity Index), which showed how rigorous each expert was in their

assessment; the third step consisted of averaging the S-CVI, called S-CVI/AVE (Scale-level Content Validity Index, Average Calculation Method), which verified the mean approval rate of each expert.

The binomial test was used with a 5% significance level to verify the proportion of agreement greater than or equal to 0.80. Each item could be considered approved when p-value was greater than 0.05. Items with a CVI lower than 0.80 were also considered approved, as long as p-value was greater than 0.05.

Cronbach's alpha coefficient was used to estimate the reliability of the questionnaire applied in the research, in which it is possible to classify the coefficient as excellent ($\alpha \geq 0.9$), good ($0.9 > \alpha \geq 0.8$), acceptable ($0.8 > \alpha \geq 0.7$), questionable ($0.7 > \alpha \geq 0.6$), poor ($0.6 > \alpha \geq 0.5$) and unacceptable ($\alpha < 0.5$). Kendall's coefficient of agreement was applied to assess the degree of multiple agreement among judges, where this coefficient varies between 0 and 1, and the higher the value of the coefficient, the greater the agreement among judges.[13] Data analysis occurred in the R software version 4.1.0.[14] For the final version of the instrument, experts' assessments and considerations were considered.

The study was approved by the Research Ethics Committee of the *Universidade Federal de Sergipe*, under Opinion 4.386.213 of November 9, 2020 and CAAE (*Certificado de Apresentação para Apreciação Ética* - Certificate of Presentation for Ethical Consideration) 38075120.0.0000.5546. It followed the ethical standards of Resolution 466/2012 of the Brazilian National Health Council.

Results

From the bibliographic survey, basic elements were identified to compose the proposed form, from which 64 items were created, divided into six topics, called domains: I – PTMB identification; II - Maternal and prenatal history; III - Birth/delivery data; IV - Hospitalization data; V - Data at discharge; VI - Post-discharge monitoring/follow-up. All domains had a mean approval rate from judges above 80%, as shown in Table 1. Among the modifications suggested by experts, the need to change the order of items in the form, the layout of items in the domains and adjustments in

the writing stands out. At the end of this step, the first version of the form was created to continue with content validity.

Table 1 - Average decision by experts per domain in the semantic analysis step regarding maintenance, deletion and modification of items per domain

	Maintenance (%)	Exclusion (%)	Modification (%)
Domain I	89.90	-	10.20
Domain II	91.96	-	8.04
Domain III	92.14	1.43	6.43
Domain IV	83.73	6.35	9.92
Domain V	86.36	9.74	3.90
Domain VI	87.50	4.46	8.04

During the first round of content validity, the domain relating to PTNB identification obtained an I-CVI value below 0.80 in all analyzed criteria, showing the need for adjustments to the items in this section of the instrument. the objectivity, scientific writing, relevance, sequence, uniqueness, and update criteria were considered approved, even with an I-CVI below 0.80, as they reached a p-value greater than 0.05. Regarding the comprehensiveness, clarity, coherence, item criticality criteria, they were considered failed. Judges' agreement obtained a mean approval rate (S-CVI/AVE) of 67% (Table 2).

Table 2 - Agreement of judges (I-CVI) in the first step of content validity regarding domains I (PTNB identification), II (Maternal and prenatal history) and III (Birth/delivery data) of the instrument

	Domain I		Domain II		Domain III	
Item	**I-CVI**	**p-value**	**I-CVI**	**p-value**	**I-CVI**	**p-value**
Coverage	0.50	0.001	0.50	0.001	0.63	0.041
Clarity	0.58	0.017	0.67	0.122	0.79	1.000
Coherence	0.63	0.041	0.63	0.041	0.71	0.303
Item criticality	0.58	0.017	0.71	0.303	0.75	0.608
Objectivity	0.71	0.303	0.79	1.000	0.83	1.000
Scientific writing	0.75	0.608	0.71	0.303	0.88	0.453
Relevance	0.75	0.608	0.79	1.000	0.79	1.000
Sequence	0.75	0.608	0.83	1.000	0.88	0.453
Uniqueness	0.75	0.608	0.75	0.608	0.79	1.000
Update	0.67	0.122	0.71	0.303	0.79	1.000
	Cronbach's alpha = 0.93		**Cronbach's alpha** = 0.95		**Cronbach's alpha** = 0.94	
	Kendall's agreement = 0.40 (p-value < 0.001)		**Kendall's agreement** = 0.42 (p-value < 0.001)		**Kendall's agreement** = 0.36 (p-value < 0.001)	
	S-CVI/AVE = 0.67		**S-CVI/AVE** = 0.71		**S-CVI/AVE** = 0.78	

In the domain relating to maternal history and prenatal care, the sequence criterion obtained an I-CVI value above 0.80. The other criteria analyzed demonstrated the need for adjustments in the assessed section. The comprehensiveness and coherence criteria were considered failed, while the others were considered approved with the need for adjustments. Judges' mean approval rate was 71% (Table 2).

In the domain relating to birth/delivery data, the objectivity, scientific writing and sequence criteria were approved. The comprehensive criterion was considered failed and the other criteria were considered approved with the need for adjustments. Judges' agreement in the section relating to PTNB identification obtained a mean approval rate of 78% (Table 2).

All criteria in the domain referring to hospitalization data had an I-CVI value below 0.80, highlighting the need for adjustments to items. The coherence, objectivity, scientific writing, relevance and sequence criteria were considered approved, even with an I-CVI below 0.80, as they reached a p-value greater than 0.05. Regarding the comprehensiveness, clarity, criticality of the items, uniqueness, and update criteria, they were considered failed. Judges' agreement in the section achieved a mean approval rate of 63% (Table 3).

Table 3 - Agreement of judges (I-CVI) in the first step of content validity regarding domains IV (Hospitalization data), V (Data at discharge from the NICU) and VI (Post-discharge monitoring/follow-up) of the instrument

	Domain IV		Domain V		Domain VI	
Item	**I-CVI**	**p-value**	**I-CVI**	**p-value**	**I-CVI**	**p-value**
Coverage	0.54	0.004	0.46	0.46	0.46	0.000
Clarity	0.63	0.041	0.63	0.63	0.67	0.122
Coherence	0.67	0.122	0.54	0.54	0.58	0.017
Item criticality	0.54	0.004	0.54	0.54	0.54	0.004
Objectivity	0.67	0.122	0.67	0.67	0.63	0.041
Scientific writing	0.67	0.122	0.67	0.67	0.67	0.122
Relevance	0.79	1.000	0.63	0.63	0.58	0.017
Sequence	0.71	0.303	0.67	0.67	0.58	0.017
Uniqueness	0.63	0.041	0.67	0.67	0.58	0.017
Update	0.50	0.001	0.54	0.54	0.54	0.004
	Cronbach's alpha = 0.95		**Cronbach's alpha** = 0.96		**Cronbach's alpha** = 0.98	
	Kendall's agreement = 0.54 (p-value < 0.001)		**Kendall's agreement** = 0.56 (p-value < 0.001)		**Kendall's agreement** = 0.66 (p-value < 0.001)	
	S-CVI/AVE = 0.63		**S-CVI/AVE** = 0.60		**S-CVI/AVE** = 0.58	

In the domain relating to data on discharge from the NICU, all analyzed criteria obtained an I-CVI value below 0.80. The items were considered approved with the need for adjustments. The analysis of judges' agreement in the section referring to data on discharge from the NICU obtained a mean approval rate of 60% (Table 3).

In the domain relating to post-discharge monitoring/follow-up, all analyzed criteria obtained an I-CVI value below 0.80. The comprehensiveness, coherence, criticality of items, objectivity, relevance, sequence, uniqueness and update criteria were rejected. The remaining items were considered approved with the need for adjustments and the analysis of judges' agreement obtained a mean approval rate of 58% (Table 3).

In the second round, a mean approval rate of more than 80% was identified among the judges in all analyzed domains, so everyone was considered approved (Tables 4 and 5). The domain with the lowest approval rate reached 87%, while the one with the highest rate reached 90%.

Table 4 - Agreement of judges (I-CVI) in the second step of content validity regarding domains I (PTNB identification), II (Maternal and prenatal history) and III (Birth/delivery data) of the instrument

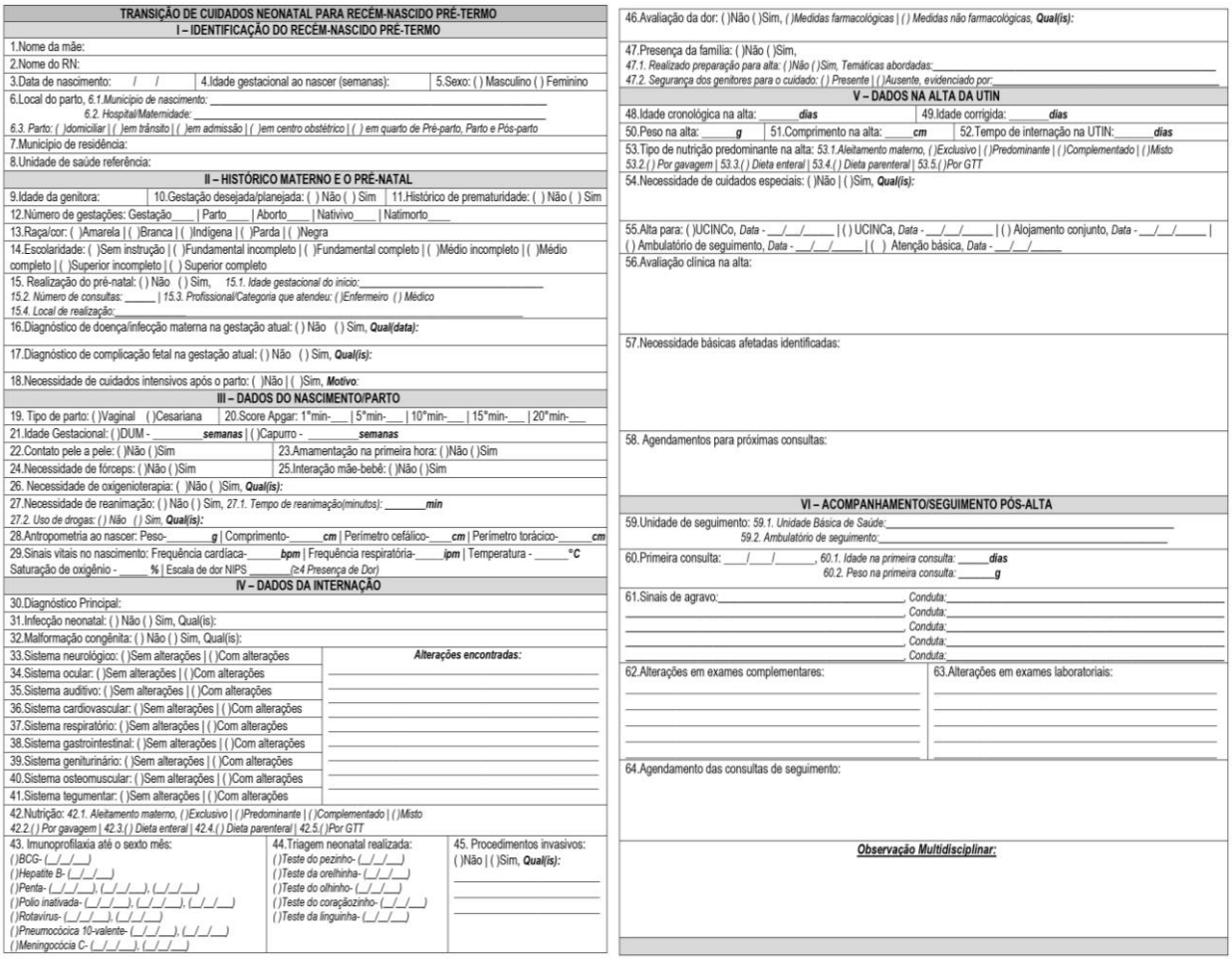
	Domain I		**Domain II**		**Domain III**	
Item	**I-CVI**	**p-value**	**I-CVI**	**p-value**	**I-CVI**	**p-value**
Coverage	0.91	0.293	0.83	1.000	0.91	0.293
Clarity	0.87	0.602	0.87	0.602	0.83	1.000
Coherence	0.83	1.000	0.87	0.602	0.87	0.602
Item criticality	0.91	0.293	0.87	0.602	0.83	1.000
Objectivity	0.83	1.000	0.91	0.293	0.91	0.293
Scientific writing	0.87	0.602	0.87	0.602	0.74	0.438
Relevance	0.91	0.293	0.96	0.067	0.91	0.293
Sequence	0.91	0.293	0.96	0.067	0.87	0.602
Uniqueness	0.91	0.293	0.83	1.000	0.91	0.293
Update	0.87	0.602	0.87	0.602	0.91	0.293
	Cronbach's alpha = 0.97		**Cronbach's alpha** = 0.91		**Cronbach's alpha** = 0.95	
	Kendall's agreement = 0.24 (p-value < 0.001)		**Kendall's agreement** = 0.20 (p-value = 0.003)		**Kendall's agreement** = 0.23 (p-value < 0.001)	
	S-CVI/AVE = 0.88		**S-CVI/AVE** = 0.88		**S-CVI/AVE** = 0.87	

The questionnaire reliability was considered excellent in all domains – since the coefficient was greater than or equal to 0.9 and the degree of multiple agreement among judges obtained statistically significant values. Therefore, the version of the transition of care form was approved with a total of six domains and 64 items.

Table 5 - Agreement of judges (I-CVI) in the second step of content validity regarding domains IV (Admission data), V (Data at discharge from the NICU) and VI (Post-discharge monitoring/follow-up) of the instrument

	Domain IV		Domain V		Domain VI	
Item	**I-CVI**	**p-value**	**I-CVI**	**p-value**	**I-CVI**	**p-value**
Coverage	0.83	1.000	0.83	1.000	0.78	0.796
Clarity	0.91	0.293	0.91	0.293	0.91	0.293
Coherence	0.91	0.293	0.91	0.293	0.91	0.293
Item criticality	0.87	0.602	0.83	1.000	0.87	0.602
Objectivity	0.96	0.067	0.91	0.293	0.91	0.293
Scientific writing	0.91	0.293	0.87	0.602	0.91	0.293
Relevance	0.96	0.067	0.91	0.293	0.91	0.293
Sequence	0.87	0.602	0.91	0.293	0.91	0.293
Uniqueness	0.91	0.293	0.87	0.602	0.91	0.293
Update	0.87	0.602	0.91	0.293	0.91	0.293
	Cronbach's alpha = 0.96		**Cronbach's alpha** = 0.94		**Cronbach's alpha** = 0.92	
	Kendall's agreement = 0.20 (p-value < 0.004)		**Kendall's agreement** = 0.23 (p-value < 0.001)		**Kendall's agreement** = 0.18 (p-value < 0.012)	
	S-CVI/AVE = 0.90		**S-CVI/AVE** = 0.89		**S-CVI/AVE** = 0.90	

Figure 1 shows the final version of the transition of care form approved by judges during the research.



TRANSIÇÃO DE CUIDADOS NEONATAL PARA RECÉM-NASCIDO PRÉ-TERMO

I – IDENTIFICAÇÃO DO RECÉM-NASCIDO PRÉ-TERMO

1.Nome da mãe:
2.Nome do RN:
3.Data de nascimento: / / | 4.Idade gestacional ao nascer (semanas): | 5.Sexo: ( ) Masculino ( ) Feminino
6.Local do parto, *6.1.Município de nascimento:* _____
6.2. Hospital/Maternidade: _____
6.3. Parto: ( )domiciliar | ( )em trânsito | ( )em admissão | ( )em centro obstétrico | ( ) em quarto de Pré-parto, Parto e Pós-parto
7.Município de residência:
8.Unidade de saúde referência:

II – HISTÓRICO MATERNO E O PRÉ-NATAL

9.Idade da genitora: | 10.Gestação desejada/planejada: ( ) Não ( ) Sim | 11.Histórico de prematuridade: ( ) Não ( ) Sim
12.Número de gestações: Gestação____ | Parto____ | Aborto____ | Nativivo____ | Natimorto____
13.Raça/cor: ( )Amarela | ( )Branca | ( )Indígena | ( )Parda | ( )Negra
14.Escolaridade: ( )Sem instrução | ( )Fundamental incompleto | ( )Fundamental completo | ( )Médio incompleto | ( )Médio completo | ( )Superior incompleto | ( ) Superior completo
15. Realização do pré-natal: ( ) Não ( ) Sim, *15.1. Idade gestacional do início:*_____
15.2. Número de consultas: _____ | *15.3. Profissional/Categoria que atendeu: ( )Enfermeiro ( ) Médico*
*15.4. Local de realização:*_____
16.Diagnóstico de doença/infecção materna na gestação atual: ( ) Não ( ) Sim, ***Qual(data):***
17.Diagnóstico de complicação fetal na gestação atual: ( ) Não ( ) Sim, ***Qual(is):***
18.Necessidade de cuidados intensivos após o parto: ( )Não | ( )Sim, ***Motivo:***

III – DADOS DO NASCIMENTO/PARTO

19. Tipo de parto: ( )Vaginal ( )Cesariana | 20.Score Apgar: 1°min-___ | 5°min-___ | 10°min-___ | 15°min-___ | 20°min-___
21.Idade Gestacional: ( )DUM - _____***semanas*** | ( )Capurro - _____***semanas***
22.Contato pele a pele: ( )Não ( )Sim | 23.Amamentação na primeira hora: ( )Não ( )Sim
24.Necessidade de fórceps: ( )Não ( )Sim | 25.Interação mãe-bebê: ( )Não ( )Sim
26. Necessidade de oxigenioterapia: ( )Não ( )Sim, ***Qual(is):***
27.Necessidade de reanimação: ( ) Não ( ) Sim, *27.1. Tempo de reanimação(minutos):* _____***min***
27.2. Uso de drogas: ( ) Não ( ) Sim, ***Qual(is):***
28.Antropometria ao nascer: Peso-_____***g*** | Comprimento-_____***cm*** | Perímetro cefálico-_____***cm*** | Perímetro torácico-_____***cm***
29.Sinais vitais no nascimento: Frequência cardíaca-_____***bpm*** | Frequência respiratória-_____***ipm*** | Temperatura - _____***°C***
Saturação de oxigênio - _____ **%** | Escala de dor NIPS _____*(≥4 Presença de Dor)*

IV – DADOS DA INTERNAÇÃO

30.Diagnóstico Principal:
31.Infecção neonatal: ( ) Não ( ) Sim, Qual(is):
32.Malformação congênita: ( ) Não ( ) Sim, Qual(is):

33.Sistema neurológico: ( )Sem alterações | ( )Com alterações	***Alterações encontradas:***
34.Sistema ocular: ( )Sem alterações | ( )Com alterações	
35.Sistema auditivo: ( )Sem alterações | ( )Com alterações	
36.Sistema cardiovascular: ( )Sem alterações | ( )Com alterações	
37.Sistema respiratório: ( )Sem alterações | ( )Com alterações	
38.Sistema gastrointestinal: ( )Sem alterações | ( )Com alterações	
39.Sistema geniturinário: ( )Sem alterações | ( )Com alterações	
40.Sistema osteomuscular: ( )Sem alterações | ( )Com alterações	
41.Sistema tegumentar: ( )Sem alterações | ( )Com alterações	

42.Nutrição: *42.1. Aleitamento materno, ( )Exclusivo | ( )Predominante | ( )Complementado | ( )Misto*
42.2 ( ) Por gavagem | 42.3.( ) Dieta enteral | 42.4.( ) Dieta parenteral | 42.5.( )Por GTT

43. Imunoprofilaxia até o sexto mês: ( )BCG- (__/__/___) ( )Hepatite B- (__/__/___) ( )Penta- (__/__/___), (__/__/___), (__/__/___) ( )Polio inativada- (__/__/___), (__/__/___), (__/__/___) ( )Rotavírus- (__/__/___), (__/__/___) ( )Pneumocócica 10-valente- (__/__/___), (__/__/___) ( )Meningocócica C- (__/__/___), (__/__/___)	44.Triagem neonatal realizada: ( )Teste do pezinho- (__/__/___) ( )Teste da orelhinha- (__/__/___) ( )Teste do olhinho- (__/__/___) ( )Teste do coraçãozinho- (__/__/___) ( )Teste da linguinha- (__/__/___)	45. Procedimentos invasivos: ( )Não | ( )Sim, ***Qual(is):***

46.Avaliação da dor: ( )Não ( )Sim, *( )Medidas farmacológicas | ( ) Medidas não farmacológicas,* ***Qual(is):***
47.Presença da família: ( )Não ( )Sim,
*47.1. Realizado preparação para alta: ( )Não ( )Sim, Temáticas abordadas:*_____
*47.2. Segurança dos genitores para o cuidado: ( ) Presente | ( )Ausente, evidenciado por:*_____

V – DADOS NA ALTA DA UTIN

48.Idade cronológica na alta: _____***dias*** | 49.Idade corrigida: _____***dias***
50.Peso na alta: _____***g*** | 51.Comprimento na alta: _____***cm*** | 52.Tempo de internação na UTIN:_____***dias***
53.Tipo de nutrição predominante na alta: *53.1.Aleitamento materno, ( )Exclusivo | ( )Predominante | ( )Complementado | ( )Misto*
53.2.( ) Por gavagem | 53.3.( ) Dieta enteral | 53.4.( ) Dieta parenteral | 53.5.( )Por GTT
54.Necessidade de cuidados especiais: ( )Não | ( )Sim, ***Qual(is):***
55.Alta para: ( )UCINCo, *Data -* __/__/_____ | ( ) UCINCa, *Data -* __/__/_____ | ( ) Alojamento conjunto, *Data -* __/__/_____ | ( ) Ambulatório de seguimento, *Data -* __/__/_____ | ( ) Atenção básica, *Data -* __/__/_____
56.Avaliação clínica na alta:
57.Necessidade básicas afetadas identificadas:
58. Agendamentos para próximas consultas:

VI – ACOMPANHAMENTO/SEGUIMENTO PÓS-ALTA

59.Unidade de seguimento: *59.1. Unidade Básica de Saúde:*_____
*59.2. Ambulatório de seguimento:*_____
60.Primeira consulta: ___/___/_____, *60.1. Idade na primeira consulta:* _____***dias***
60.2. Peso na primeira consulta: _____***g***
61.Sinais de agravo:_____, *Conduta:*_____
_____, *Conduta:*_____
_____, *Conduta:*_____
_____, *Conduta:*_____
_____, *Conduta:*_____

62.Alterações em exames complementares:	63.Alterações em exames laboratoriais:

64.Agendamento das consultas de seguimento:

Observação Multidisciplinar:

Figure 1 – Validated version of the Neonatal Transition of Care Form for Premature Newborns. Aracaju, SE, Brazil, 2021

Discussion

Transition of care tools are important for patient safety, as they allow continuity of care to be transmitted in a standardized way between services. However, to be used effectively, these technologies need to be validated after their construction.[11,15]

In semantic validity, the analyzed items were considered intelligible after the adjustments suggested by experts, with the main suggestions being related to arrangement of items, reformulation of the order of presentation and writing. Carrying out a round of semantic analysis was necessary to adjust the items before content validity, similar to what was observed in the study, in which this validity step was used.[16]

Domain I achieved a high approval rate, highlighting the importance of the presence of items aimed at carrying out safe patient identification, since the absence of

a standardized identification process between health services is one of the main causes for occurrence of failures. Studies confirm that the lack of standardized tools that enable conveying information compromises patient safety, corroborating the need for continuous improvement in identification processes.[17-18]

Other researchers recommend that in order to carry out a secure identification process, the presence of at least two qualifying elements is necessary, i.e., at least two independent items, such as “name” and “date of birth”.[18] A study demonstrated that the main information for identifying patients were the name of the person in charge, the name of the child, the date of birth and the age of the child, being equivalent to the items in the final version of the proposed form.[19]

Adverse events arising from the identification process are linked to errors in registration or lack of recording of information. The establishment of eight items in this domain demonstrates the security of the identification process used in the proposed form, being in line with studies that demonstrate the importance of adapting the content of the information necessary for this process.[20-21]

One point was highlighted by experts: the need to maintain PTNBs’ name and mothers’ name in the identification process, maintaining the mother-child dyad identification, since the absence of these items depersonalizes care, corroborating the permanence of both in the field of the instrument relating to identification.[19]

Mothers’ history and prenatal care are associated with the outcome of prematurity.[22] Furthermore, mothers’ genetic and behavioral factors, such as chronic diseases, infections, smoking and alcohol consumption, are associated with complications during pregnancy.[23] The studies highlight the need for this information to be present in the transition form, as correct completion will establish a risk profile for mothers associated with the outcome of prematurity, in addition to directing professionals on factors during pregnancy that are related to prematurity. [22-23]

Mastery of information relating to birth and delivery is relevant to help professionals understand the facts that occurred at the time of birth that may justify premature babies’ clinical outcome as well as helping to understand their future care needs. Research that characterized the profile of premature patients showed that the

majority had an Apgar score lower than 7 in the first minute, highlighting the importance of recording this information on the proposed form.[24]

Domain IV grouped information regarding PTNB hospitalization with the objective of knowing the trajectory during the hospitalization of this child. It is known that the period of hospitalization may vary according to PTNBs' clinical evolution and needs. Information about nutrition, allocated in this domain, is important as it is related to defining the prognosis and monitoring of patients who have nutritional restrictions. It is proven that the early initiation of enteral and parenteral nutrition for preterm infants with breastfeeding restrictions is effective in weight gain in premature infants, and is considered relevant for a better prognosis.[25-26] Therefore, recording this data is crucial for monitoring.

Still in domain IV, information regarding the performance of neonatal screening tests recommended by the Ministry of Health for the early detection of some diseases was allocated, since there is evidence that discrepancies occur in the execution of screening tests, identifying inequalities in carried out, which is why the record of ear and tongue tests was also included, in addition to those already recommended.[27]

Domains V and VI included the main information regarding PTNB hospital discharge and outpatient follow-up. This part was composed of information that records the main needs identified for safe care of this child. Studies highlight that the information contained in these domains is relevant, as it is received by the multidisciplinary team responsible for planning the care that will be intended for premature babies. [28-29]

Information related to preparing the family to care for PTNBs after discharge is important, since the presence of the family during the hospitalization period allows the establishment of a bond between the baby and its support network; however, this participation can be considered unstable, but cannot be disconnected in the PTNB recovery process. Therefore, it is essential for professionals who carry out follow-up to understand the level of education of this family, which allows the development of a process of preparation for post-discharge care inclusively designed and that enables the development of safety for members of the care network support in caring for PTNBs when they are at home. [28]

In the last domain was the space intended for recording future appointments for outpatient follow-up with the multidisciplinary team, a crucial moment in a premature baby's clinical evolution, as it is the ideal environment for identifying potential worsening of children's health, being confirmed by a study that concluded that access to these services is essential for improving the quality of life and helps to reduce the vulnerabilities that children are subject to.[29]

The limitations of this study were the withdrawal of an expert in the validity process and delay in obtaining the answers requested in the validity process by some of the participants. There is also a need to carry out a new study to apply the form constructed to assess its use by professionals.

With the construction and validity of this form, technology becomes available to enable the safe transition of premature patient information, strengthening the referral and counter-referral system between health services and enabling a safe and standardized transition of care.

Conclusion

Form validity was achieved using the Delphi method, following the steps of the theoretical procedures of the instrument construction model proposed by Pasquali, being constructed with a total of 64 items organized into six main domains, with approval rates above 85% in all of them. Conducting the validity steps allowed the form to be constructed through analysis and contributions from professionals specializing in the subject, generating a transition of care form that will be easily applicable to the Brazilian reality.

References

1. Chawanpaiboon S, Vogel JP, Moller AB, Lumbiganon P, Petzold M, Hogan D, et al. Global, regional, and national estimates of levels of preterm birth in 2014: a systematic review and modelling analysis. Lancet Glob Health. 2019;7(1):e37-46. doi: 10.1016/S2214-109X(18)30451-0

2. Martinelli KG, Dias BAS, Leal ML, Belotti L, Garcia EM, Santos Neto ET. Prematuridade no Brasil entre 2012 e 2019: dados do Sistema de Informações sobre Nascidos Vivos. Rev Bras Estud Popul. 2021;38:e0173. doi: 10.20947/S0102-3098a0173

3. Beleza LO, Ribeiro LM, Paula RA, Guarda LE, Vieira GB, Costa KSF. Profile of at-risk newborns attended by nurses in outpatient follow-up clinic: a retrospective cohort study. Rev Latinoam Enferm. 2019;27:e3113. doi: 10.1590/1518-8345.2301.3113

4. Freire LM, Camponêz PSP, Maciel IVL, Vieira CS, Bueno M, Duarte ED. Factors associated with non-adherence to outpatient follow-up of neonatal intensive care discharge. Rev Esc Enferm USP. 2018;52:e03372. doi: 10.1590/S1980-220X2017029703372

5. Diniz IA, Guimarães BR, Silva JB, Tavares TS, Duarte ED. Discontinuity of outpatient follow-up of risk children: perspective of mothers. Esc Anna Nery Rev Enferm. 2019;23(2):e20180248. doi: 10.1590/2177-9465-EAN-2018-0248

6. Ministério da Saúde (BR). Secretaria de Atenção à Saúde. Departamento de Ações Programáticas Estratégicas. Política Nacional de Atenção Integral à Saúde da Criança: orientações para implementação [Internet]. Brasília (DF): Ministério da Saúde; 2018 [acesso em 2022 dez 02]. Disponível em: https://portaldeboaspraticas.iff.fiocruz.br/wp-content/uploads/2018/07/Pol%C3%ADtica-Nacional-de-Aten%C3%A7%C3%A3o-Integral-%C3%A0-Sa%C3%BAde-da-Crian%C3%A7a-PNAISC-Vers%C3%A3o-Eletr%C3%B4nica.pdf

7. Kuo DZ, Berry JG, Hall M, Lyle RE, Stille CJ. Health-care spending and utilization for children discharged from a neonatal intensive care unit. J Perinatol. 2018;38(6):734-41. doi: 10.1038/s41372-018-0055-5

8. Lima MAD, Magalhães AMM, Oelke ND, Marques GQ, Lorenzini E, Weber LA, et al. Estratégias de transição de cuidados nos países latino-americanos: uma revisão integrativa. Rev Gaúcha Enferm. 2018;39:e20180119. doi: 10.1590/1983-1447.2018.20180119

9. Voie MP, Tunby J, Strømsvik N. Collaboration challenges faced by nurses when premature infants are discharged. Nurs Child Young People. 2018;30:2. doi: 10.7748/ncyp.2018.e960

10. Yu M, Lee HY, Sherwood G, Kim EM. Nurses' handoff and patient safety culture in perinatal care units: nurses' handoff evaluation and perception of patient safety culture at delivery room and neonatal unit in South Korea. J Clin Nurs. 2018;27:e1442-50. doi: 10.1111/jocn.14260

11. Abraham J, Kannampallil T, Brenner C, Lopez KD, Almoosa KF, Patel B, et al. Characterizing the structure and content of nurse handoffs: a Sequential Conversational Analysis approach. J Biomed Inform. 2016;59:76-88. doi: 10.1016/j.jbi.2015.11.009

12. Pasquali L. Instrumentação psicológica: Fundamentos e práticas. Porto Alegre: Artmed; 2010.

13. Cronbach LJ. Coefficient alpha and the internal structure os tests. Psychometrika. 1951;16:297-334.

14. The R Core Team. R: a language and environment for statistical computing. Vienna (AUT): R Foundation for Statistical Computing; 2021.

15. Van Seben R, Geerlings S, Verhaegh K, Hilders C, Buurman B. Implementation of a transfer intervention procedure (tip) to improve handovers from hospital to home: interrupted time series analysis. BMC Health Serv Res. 2016;16(1):479. doi: 10.1186/s12913-016-1730-x

16. Freitas RF, Waecheter HN, Coutinho SG, Gubert FA. Semantic aspects validation in guidelines for the elaboration of Printed Educational Materials for Health Promotion: contribution of Information Design. InfoDesign. 2020;17(1):152-69. doi: 10.51358/id.v17i1.759

17. Ventura-Silva JMA, Castro SFM, Sousa SG, Esteves NEC, Monteiro MAJ, Ribeiro OMPL. Identificação do paciente como estratégia de segurança. Rev Enferm UFPE On Line. 2020;14:e245056. doi: 10.5205/1981-8963.2020.245056

18. Vieira NC, Amaro MO, Siman AG, Lima JL, Alves EC. A identificação do paciente no alcance de práticas seguras: concepções e práticas. Rev Enferm Atual In Derme. 2019;87. doi: 10.31011/reaid-2019-v.87-n.especial-art.156

19. Bernal SCZ, Raimondi DC, Oliveira JLC, Inoe KC, Matsuda LM. Práticas de identificação do paciente em unidade de terapia intensiva pediátrica. Cogitare Enferm. 2018;3(23):e55390. doi: 10.5380/ce.v23i3.53390

20. Rissi GP, Shibukawa BMC, Ferreira AMD, Uema RTB, Merino MFGL, Higarashi IH. Identificação do paciente recém-nascido: revisão de escopo. Rev Eletrônica Enferm. 2021;23:67546. doi: 10.5216/ree.v23.67546

21. Rebello LKZ, Quemel FS, Peterlini OL. Estratégias para a implantação do protocolo de identificação do paciente em um hospital de médio porte no Noroeste do Paraná. Rev Saúde Pública Paraná. 2019;2:1. doi: 10.32811/25954482-2019v2supl1p31

22. Buendgens BB, Teles JM, Gonçalves AC, Bonilha ALL. Maternal characteristics on the occurrence of late prematurity. Rev Enferm UFPE On Line. 2017;11(Suppl 7):2897-906. doi: 10.5205/reuol.11007-98133-3-SM.1107sup201711

23. Teixeira GA, Carvalho JBL, Sena AV, Morais PC, Alves TRM. Maternal features of premature births. Rev Enferm Atual In Derme. 2017;81. doi: 10.31011/reaid-2017-v.81-n.19-art.317

24. Jesus RLR, Santos GM, Barreto MTS, Monteiro MJS, Silva RVS, Silva HJN. Characterization of newborns preterm born in the state of Piauí among 2011 to 2015. Arch Health Invest. 2019;8(4):217-23. doi: 10.21270/archi.v8i4.3193

25. Pechepiura EP, Freire MH, Martins KP, Pinto MNGR, Moraes SRL. Characterization at birth and nutritional of premature newborns in the intensive unit of a public hospital. Rev Saúde Pública Paraná. 2021;4:1. doi: 10.32811/25954482-2021v4n1p48

26. Lopes CC, Machado RC, Lima GC, Reis D, Saunders C, et al. Enteral nutrition practices in preterm infants in the neonatal unit of a public maternity ward. Mundo Saúde. 2018;42(3):696-709. doi: 10.15343/0104-7809.20184203696709

27. Mallmann MB, Tomasi YT, Boing AF. Neonatal screening tests in Brazil: prevalence rates and regional and socioeconomic inequalities. J Pediatr (Rio J). 2020;96:4. doi: 10.1016/j.jped.2019.02.008

28. Nascimento ACT, Morais AC, Amorim RC, Santos DV. O cuidado realizado pela família ao recém-nascido prematuro: análise sob a teoria transcultural de Leininger. Rev Bras Enferm. 2020;73(4):e20190644. doi: 10.1590/0034-7167-2019-0644

29. Furtado MCC, Mello DF, Pina JC, Vicente JB, Lima PR, Rezende VD. Ações e articulações do enfermeiro no cuidado da criança na atenção básica. Texto Contexto Enferm. 2018;27(1):e0930016. doi: 10.1590/0104-07072018000930016

Author's contributions

1 – José Matheus de Melo Santos
Corresponding Author
Nurse, Masters - enfo.jmatheus@gmail.com
Research conception, development and manuscript writing, review and approval of the final version.

2 – Eliana Ofélia Llapa-Rodríguez
Nurse, Phd - elianaofelia@academico
Contributions: review and approval of the final version.

3 – Maria do Socorro Claudino Barreiro
Nurse, Phd - socorrocbarreiro@gmail.com
Review and approval of the final version.

4 – Rosemar Barbosa Mendes
Nurse, Phd - rosemarbm@uol.com.br
Review and approval of the final version.

5 – Iellen Dantas Campos Verdes Rodrigues
Nurse, Phd - iellendantas@hotmail.com
Review and approval of the final version.

Como citar este artigo

Santos JMM, Llapa-Rodriguez EO, Barreiro MSC, Mendes RB, Rodrigues IDCV. Construction and validity of a form for transition of care for premature newborns. Rev. Enferm. UFSM. 2024 [Access at: Year Month Day]; vol.14, e6:1-17. DOI: https://doi.org/10.5902/2179769285009