Special Section

TEXTO & CONTEXTO ENFERMAGEM
TEXT & CONTEXT NURSING TEXTO & CONTEXTO ENFERMERÍA

I-DECIDED®-BRAZIL: CROSS-CULTURAL ADAPTATION OF AN ASSESSMENT AND DECISION-MAKING TOOL FOR PERIPHERAL INTRAVENOUS CATHETER

Thiago Lopes Silva[1]
Gillian Ray-Barruel[2,3,4]
Amanda Ullman[2,4,5]
Patrícia Kuerten Rocha[1]

[1]Universidade Federal de Santa Catarina, Programa de Pós-graduação em Enfermagem. Florianópolis Santa Catarina, Brasil.
[2]University of Queensland, School of Nursing, Midwifery and Social Work. Brisbane, Australia.
[3]Metro North Hospital and Health Service, Herston Infectious Diseases Institute. Brisbane, Australia.
[4]Griffith University, School of Nursing and Midwifery, and Menzies Health Institute Queensland, Alliance for Vascular Access Teaching and Research. Nathan, Australia.
[5]Children's Health Queensland Hospital and Health Service. Brisbane, Australia.

ABSTRACT

Objective: to translate and adapt the I-DECIDED® Tool to Portuguese and Brazilian context.
Method: this methodological research used Beaton's framework for the translation and cross-cultural adaptation process, which occurred in five stages: initial translation; synthesis of translations; back-translation; committee of experts; and pre-testing. It was carried out from July to December 2022. For data analysis, the Content Validity Index and Cronbach's alpha were used.
Results: from a committee of experts, the adapted version of I-DECIDED® obtained satisfactory semantic, idiomatic, experiential and conceptual equivalence when compared to the original version, reaching a Content Validity Index of 0.94. In pre-testing, 60 nurses participated, and the reliability of the adapted tool was 0.83.
Conclusion: the translation and cross-cultural adaptation process of I-DECIDED® was carried out and provides Brazilian professionals with an assessment and decision-making tool in relation to peripheral intravenous catheters aligned with patient safety.

DESCRIPTORS: Nursing. Patient safety. Catheterization, peripheral. Clinical decision-making. Translating. Cross-cultural comparison.

HOW CITED: Silva TL, Ray-Barruel G, Ullman A, Rocha PK. I-DECIDED®-Brazil: cross-cultural adaptation of an assessment and decision-making tool for peripheral intravenous catheter. Texto Contexto Enferm [Internet]. 2024 [cited YEAR MONTH DAY]; 33: e20230279. Available from: https://doi.org/10.1590/1980-265X-TCE-2023-0279en

I-DECIDED®-BRASIL: ADAPTAÇÃO TRANSCULTURAL DA FERRAMENTA DE AVALIAÇÃO E TOMADA DE DECISÃO PARA CATETER INTRAVENOSO PERIFÉRICO

RESUMO

Objetivo: traduzir e adaptar a Ferramenta I-DECIDED® para o idioma português e contexto brasileiro.
Método: pesquisa metodológica que utilizou o referencial de Beaton para o processo de tradução e adaptação transcultural, que ocorreu em cinco etapas: tradução inicial, síntese das traduções, tradução reversa, comitê de especialistas e pré-teste. Realizado no período de julho a dezembro de 2022. Para análise de dados, foram utilizados o Índice de Validade de Conteúdo e Alpha de *Cronbach*.
Resultados: a partir do Comitê de Especialistas, a versão adaptada da Ferramenta I-DECIDED® obteve satisfatória equivalência semântica, idiomática, experiencial e conceitual quando comparada à original, atingindo o Índice de Validade de Conteúdo de 0,94. No pré-teste, participaram 60 enfermeiros e a confiabilidade da Ferramenta adaptada foi de 0,83.
Conclusão: o processo de tradução e adaptação transcultural da Ferramenta I-DECIDED® foi realizado e disponibiliza aos profissionais brasileiros uma ferramenta de avaliação e tomada de decisão em relação ao cateter intravenoso periférico alinhada à segurança do paciente.

DESCRITORES: Enfermagem. Segurança do paciente. Cateterismo periférico. Tomada de decisão clínica. Tradução. Comparação transcultural.

I-DECIDED®-BRASIL: ADAPTACIÓN TRANSCULTURAL DE UNA HERRAMIENTA DE EVALUACIÓN Y TOMA DE DECISIONES PARA CATÉTERES INTRAVENOSOS PERIFÉRICOS

RESUMEN

Objetivo: traducir y adaptar la herramienta I-DECIDED® al idioma portugués y al contexto brasileño.
Método: esta investigación metodológica utilizó el marco de Beaton para el proceso de traducción y adaptación transcultural, que ocurrió en cinco etapas: traducción inicial; síntesis de traducciones; traducción inversa; comité de expertos; y prueba previa. Se realizó de julio a diciembre de 2022. Para el análisis de los datos se utilizó el Índice de Validez de Contenido y el alfa de Cronbach.
Resultados: con base en el comité de expertos, la versión adaptada de I-DECIDED® obtuvo equivalencia semántica, idiomática, experiencial y conceptual satisfactoria respecto al original, alcanzando un Índice de Validez de Contenido de 0,94. En el pretest participaron 60 enfermeros y la confiabilidad de la herramienta adaptada fue de 0,83.
Conclusión: se realizó el proceso de traducción y adaptación transcultural de la I-DECIDED® que brinda a los profesionales brasileños una herramienta de evaluación y toma de decisiones en relación a los catéteres intravenosos periféricos alineados con la seguridad del paciente.

DESCRIPTORES: Enfermería. Seguridad del paciente. Cateterismo periférico. Toma de decisiones clínicas. Traducción. Comparación transcultural.

INTRODUCTION

Peripheral intravenous catheters (PIVC) are the most commonly used invasive devices in hospitalized patients[1–3]. However, despite their widespread use, complications and failures are frequent occurrences, turning PIVC into a worldwide problem[1]. Research carried out in several countries revealed that PIVC care often does not meet recommended standards both in adult[4] and pediatric patients[5].

The rate of complications and/or failures before treatment completion may vary, depending on the clinical setting, ranging between 18% and 36%[1,3]. The most frequently reported complications in studies include infiltration, occlusion, pain, phlebitis, and catheter displacement[1,3–4]. Adequate fixation and coverage are essential measures to preserve catheter integrity, thus reducing the risk of complications and failures[6]. However, practices related to PIVC coverage also do not meet ideal standards[4–6].

Another issue faced concerns PIVC retention after completion of treatment, exposing patients to the risk of unnecessary complications, such as catheter-related infections[2]. In 2018, in a multinational observational study, globally, 14% of PIVC were not used in the last 24 hours[4], whereas in Latin America this rate was 9%[3]. Therefore, it is crucial that healthcare professionals incorporate verification of PIVC that are no longer clinically indicated or in use into their assessment routines[2–4,7].

There is a notable absence of records related to PIVC, such as reason, date and place of insertion[3–4]. An observational study in Spain revealed that more than 50% of PIVC insertions did not have complete records[8], a result similar to a Latin American study that demonstrated that 52% of PIVC inserted by nursing technicians were not adequately documented as well as 41% of insertions performed by nurses[3]. To ensure quality care, it is essential to adopt measures to prevent complications and failures and involve patients in their own care. However, a Spanish study indicated that almost half of patients were unaware of what a PIVC was[8].

Although PIVC is a widely used device and there is numerous research on interventions to prevent PIVC-related complications, there is still uncertainty regarding the best way to implement such actions in healthcare environments[9]. For this reason, an assessment and decision-making tool was developed for PIVC[10]. This tool, called I-DECIDED®, takes the form of a mnemonic and has the purpose of assisting in assessment and decision-making related to the need and effective functioning of PIVC, in collaboration with care team and patient, being based on evidence from international clinical guidelines[10].

I-DECIDED® demonstrated solid content validity, high inter-rater reliability, feasibility, and is considered easy to use and useful by professionals in clinical practice[11]. Additionally, an Australian, multicenter, interrupted time series study established that the tool contributed to reducing the number of unused catheters (from 12.7% to 8.3%) and PIVC-related complications (from 16.1% to 10.9%)[12]. This suggests that the tool provides an effective framework for implementing guidelines in clinical settings[12]. It is important to highlight that the tool is also being recommended for other types of invasive devices, such as urinary catheters[13].

Considering the variation in healthcare processes and practices between different countries, it is essential that clinical guidelines for assessment and decision-making regarding PIVC are available in languages other than English, with the aim of supporting healthcare professionals' skills and knowledge, resulting in an improvement in PIVC care and patient safety[3]. Cross-cultural adaptation of instruments is an effective solution to overcome such gaps. To achieve this, it must be carried out following specific and rigorous methodologies[14–15].

Although I-DECIDED® tool has presented good psychometric data[11] and improved assessment and decision-making regarding PIVC care[12], it is currently only available in English. Therefore, it is important that Brazilian healthcare professionals have access to the tool in their language and that

it is adapted for their practice, considering the harmful consequences of complications and failures resulting from inadequate management of PIVC. Therefore, this study aimed to translate and adapt the I-DECIDED® IV ASSESSMENT & DECISION TOOL to Portuguese and the Brazilian context.

METHOD

This is a methodological study of translation and cross-cultural adaptation of I-DECIDED® tool. As a methodological framework, the study followed the guidelines proposed by Beaton *et al*. (Figure 1)[14–15]. Cross-cultural adaptation comprises a sequence of rigorous procedures to successfully adapt an instrument to be used in a different scenario from that in which it was developed[14–15]. The study also followed COnsensus-based Standards for the selection of health Measurement INstruments (COSMIN) recommendations and was carried out from July to December 2022.

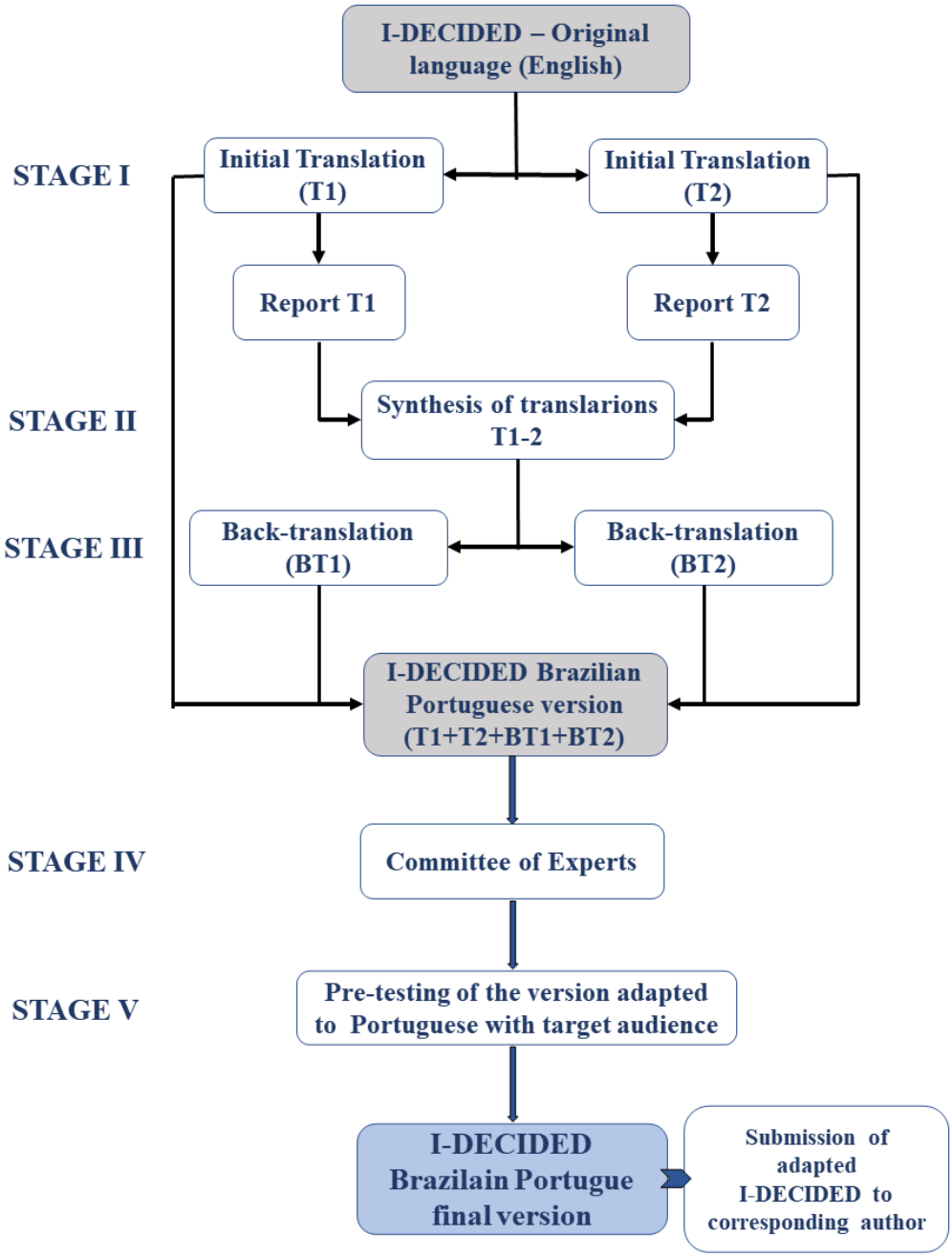

Figure 1 – I-DECIDED® cross-cultural adaptation process flowchart.
Source: adapted from Beaton *et al*.[14–15].

In the first stage, the initial translation of I-DECIDED® into Brazilian Portuguese was carried out by two native Brazilian translators. Selection took place through contact with companies specializing in translations in which translators with different backgrounds were recruited, with one of them being expected to be familiar with the topic. Each translator produced a report highlighting the difficulties, uncertainties and inclusions, accompanied by justifications for choosing the translation carried out. They were identified as Translator 1 (T1) and Translator 2 (T2).

In the second stage, synthesis of translations was carried out, and, by consensus, the preliminary version of the tool in Brazilian Portuguese was constructed, identified as Translation 1-2 (T1-2). Disagreements were discussed and resolved in a meeting via video conference, using Google Meet®, between T1, T2 and the researchers.

After synthesizing the translations, in the third stage, a back-translation of T1-2 was carried out to check for possible inaccurate translations or conceptual flaws. Two back-translations were performed by independent, bilingual translators, native English speakers. Selection also took place through contact with companies specializing in translations. At this stage, only translators who did not have training in the health field were selected, being identified as Back-Translator 1 (BT1) and Back-Translator 2 (BT2).

In the fourth stage, committee of experts, they analyzed and revised the translated tool, examining semantic equivalence, maintaining the meaning and understanding of words, idiomatic equivalence, replacing expressions and colloquialisms with equivalents, experiential equivalence, adapting different cultural situations, and conceptual equivalence, replacing words according to local culture[15]. To compose the committee, nurses specializing in vascular access, specialists in methodology, language teachers and translators (T1, T2, BT1, BT2) were selected. The search for experts was carried out intentionally through a search on the *Plataforma Lattes* and, subsequently, an invitation was sent by email. It is recommended that the committee of experts be composed of at least seven experts: a methodology expert; a healthcare professional; a language professional; translators; and back-translators[15].

Experts' assessment, agreement, or disagreement on the final configuration of each tool item was scored using a Likert-type scale (1=no equivalence, 2=little equivalence, 3=medium equivalence, 4=a lot of equivalence, and 5= total equivalence). If any item was scored equal to or less than three by experts, they would be asked to provide suggestions. To analyze equivalence validity, the Content Validity Index (CVI) was used, using the equation: CVI=number of answers 4 or 5 / total number of answers. An index equal to or greater than 0.80 was established to consider the equivalences of each item valid. If any item had a lower CVI, it would be reviewed and readjusted until it reached the stipulated CVI[16].

With all items reaching equivalence validity, the fifth stage began, pre-testing of the adapted version with the target population. Pre-testing participants were recruited using snowball sampling. Clinical nurses or undergraduate nursing professors were included. Nursing students or those who did not develop activities in the area of intravenous therapy and who did not answer the instrument completely were excluded. According to the framework used, it is recommended that at least 30 representatives of the target population participate in pre-testing the final version of the instrument[15].

Pre-testing participants assessed the understanding and clarity of the tool translated and adapted for Brazil using a structured instrument divided into two chunks. The first chunk contained participant characterization variables and the second included understanding and clarity variables, which was made available via Google Forms®. In this regard, they assessed the items using a Likert-

type scale (1=very poor, 2=poor, 3=neither good nor poor, 4=good, 5=very good). They were asked to make suggestions if they rated any item equal to or less than three so that it could be debated and appreciated by the researchers. Statistical Package for the Social Sciences (SPSS) version 25.0 was used for data analysis. A descriptive analysis was carried out to characterize the sample, and Cronbach's alpha coefficient was applied to assess internal consistency. Cronbach's alpha values greater than 0.70 were considered as evidence of satisfactory internal consistency[16].

In addition to I-DECIDED® tool, translation and cross-cultural adaptation of the Vascular Access Device Assessment Trial Form was carried out concomitantly and following the same stages, which can be used by nurses to record PIVC assessments and make decisions made with I-DECIDED®[10,17]. Corresponding author Dr. Gillian Ray-Baruel gave authorization to carry out the study. It is noteworthy that all study participants, i.e., translators, experts and target population, signed the Informed Consent Form, and the study was approved by the *Universidade Federal de Santa Catarina* Research Ethics Committee.

RESULTS

I-DECIDED® tool and Vascular Access Device Assessment Trial Form translation, carried out according to the first three stages of the method, can be synthesized in Chart 1. It is noteworthy that in the first stage one of the translators had training in the area, therefore, familiarity with the topic and research objectives[14,15].

In the fourth stage, committee of experts, 47 experts were invited to examine the tool's equivalences, of which eight returned the email and agreed to join the committee, in addition to the four translators (T1, T2, BT1 and BT2). Thus, the committee had 12 experts (six nurses, two language teachers and four translators), two of whom (16.7%) worked as pediatric and/or neonatal nursing professors, two (16.7%) as adult health nursing professors, two (16.7%) as English as second a language teacher, one (8.3%) as a pediatric and neonatal care nurse, and one (8.3%) as an adult patient care nurse. Furthermore, four hold a master's degree (33.3%) and five a Doctoral degree (41.7%); half had additional training in vascular access (50%); seven (58.3%) participated and/or coordinated studies in the area of Transcultural Adaptation; three (25%) were English as second a language teacher; and all (100%) had some additional training in English and/or translation.

Thus, 10 items were cross-culturally adapted and examined by the committee of experts in Instrument 1: I-DECIDED® Intravenous (IV) Assessment and Decision Tool and 20 in Instrument 2: Vascular Access Device Assessment Trial Form. Table 1 shows the CVI for each equivalence.

Table 1 – Content Validity Index of semantic, idiomatic, experiential and conceptual equivalences by the committee of experts. Florianópolis, SC, Brazil, 2023.

Equivalence	I-DECIDED® Intravenous (IV) Assessment and Decision Tool CVI	Vascular Access Device Assessment Trial Form CVI
Semantic	0.91	0.94
Idiomatic	0.94	0.97
Experiential	0.98	0.97
Conceptual	0.93	0.99
Mean	0.94	0.97

Chart 1 – Description of stages I, II and III of cross-cultural adaptation of I-DECIDED® Tool Brazilian Portuguese. Florianópolis, SC, Brazil, 2023.

Instrument 1: I-DECIDED® Intravenous (IV) Assessment and Decision Tool		
Original version	**Stage II – Synthesis of translations T1/T2 (T1-2)**	**Stage III – Back-translation (BT1/BT2)**
I-DECIDED® IV ASSESSMENT & DECISION TOOL	*I-DECIDED®* *FERRAMENTA DE AVALIAÇÃO E DECISÃO INTRAVENOSA (IV)*	I-DECIDED® INTRAVENOUS ASSESSMENT (IV) AND DECISION TOOL
IDENTIFY if an IV is in situ	*IDENTIFICAR se há um cateter IV instalado*	IDENTIFY If there is an IV catheter installed
DOES patient need the IV? Unused in last 24hrs? Use unlikely in next 24hrs? Consider removal. Change to oral meds?	*DETERMINAR se o paciente precisa do cateter IV?* *Não foi utilizado nas últimas 24hrs? O uso é improvável nas próximas 24hrs?* *Considere a remoção.* *Mudar para medicamentos orais?*	DETERMINE if the patient needs an IV catheter? It hasn't been used in the last 24 hours? Is its use unlikely in the next 24hrs? Consider removal. Switch to oral medications?
EFFECTIVE function? Follow local policy for flushing and locking.	*EFETIVO funcionamento?* *Siga as diretrizes da instituição quanto ao flushing e lock do cateter.*	EFFECTIVE FUNCTION? Follow institution guidelines for catheter flushing and locking.
COMPLICATIONS at IV site? Pain ≥2/10, redness, swelling, discharge, infiltration, extravasation, hardness, palpable cord or purulence.	*COMPLICAÇÕES no local do cateter IV?* *Dor ≥2/10, hiperemia, edema, exsudato, infiltração, extravasamento, endurecimento, cordão venoso palpável ou secreção purulenta.*	COMPLICATIONS at the IV Catheter Site? Pain ≥2/10, hyperemia, edema, exudate, infiltration, extravasation, hardening, palpable venous cord or purulent discharge.
INFECTION prevention Hand hygiene, scrub the hub & allow to dry before each IV access. Careful use of administration sets.	*INFECÇÃO – Prevenção* *Higienizar as mãos. Desinfectar os conectores e esperar secar antes de cada manipulação do cateter intravenoso.* *Uso cuidadoso de todos os dispositivos de infusão IV.*	INFECTION – Prevention Wash your hands. Disinfect the connectors and wait for them to dry before each handling of the IV catheter. Careful use of all IV infusion devices.
DRESSING & securement Clean, dry and intact. IV and lines secure.	*DETERMINAR cobertura e estabilização* *Curativo limpo, seco e intacto. Cateter intravenoso e de conexões seguras.*	DETERMINE COVERAGE and stabilization Clean, dry and intact dressing. Intravenous catheter with secure connections.
EVALUATE & EDUCATE Discuss IV plan with the patient & family.	*EDUCAR E AVALIAR* *Discutir o plano do cateter IV com o paciente e família.*	EDUCATE AND EVALUATE Discuss the IV catheter plan with the patient and family.

Chart 1 – Cont.

Instrument 1: I-DECIDED® Intravenous (IV) Assessment and Decision Tool		
Original version	**Stage II – Synthesis of translations T1/T2 (T1-2)**	**Stage III – Back-translation (BT1/BT2)**
DOCUMENT your decision Continue, change dressing, or remove IV.	*DOCUMENTAR sua decisão* *Manter, trocar o curativo ou remover o cateter IV.*	DOCUMENT your decision Maintaining, changing the dressing or removing the IV catheter.
Always consider local policy, and consult with team & patient as required.	*Considerar as recomendações institucionais e consultar a equipe e o paciente, conforme necessário.*	Consider institutional recommendations and consult with staff and patient as needed.
Instrument 2: Form for Assessment of the Vascular Access Device		
Original version	**Stage II – Synthesis of translations T1/T2 (T1-2)**	**Stage III – Back-translation (BT1/BT2)**
VASCULAR ACCESS DEVICE ASSESSMENT TRIAL FORM	*FORMULÁRIO PARA AVALIAÇÃO DO DISPOSITIVO DE ACESSO VASCULAR*	FORM FOR ASSESSMENT OF THE VASCULAR ACCESS DEVICE
I-DECIDED™ IV ASSESSMENT & DECISION TOOL If the IV is not needed, not working, or has any complications, it should be removed as soon as possible. Always consider local policy and consult with team & patient as required.	*I-DECIDED™ FERRAMENTA DE AVALIAÇÃO E DECISÃO INTRAVENOSA (IV)* *Se o cateter IV não for necessário, não funcionar ou apresentar alguma complicação, ele deve ser removido o mais rápido possível.* *Sempre considerar as recomendações institucionais e consultar a equipe e o paciente conforme necessário.*	I-DECIDED™ INTRAVENOUS (IV) ASSESSMENT AND DECISION TOOL If the IV catheter is not needed, does not work, or has any complications, it should be removed as soon as possible. Always consider institutional recommendations and consult with staff and patient as needed.
IV Assessment and Decision Record Tick when completed	*Avaliação do cateter IV e registro de decisão* *Assinale quando realizado*	IV catheter assessment and decision record Tick when done
IDENTIFY if an IV is in situ If an IV has been removed in past 48 hrs, observe site for post-infusion phlebitis.	*IDENTIFICAR se há um cateter IV instalado* *Se um cateter IV tiver sido removido nas últimas 48hs, observe o local quanto a flebite pós-infusão.*	IDENTIFY If there is an IV catheter installed If an IV catheter has been removed within the last 48 hours, observe the site for post-infusion phlebitis.
DOES patient need the IV? If not used in past 24 hrs, or unlikely to be used in next 24 hrs, consider removal. Consider change to oral medications.	*DETERMINAR se o paciente precisa do cateter IV?* *Se não utilizado nas últimas 24 h ou o seu uso seja improvável nas próximas 24hs, considere a remoção.* *Considere trocar para medicamentos orais.*	DETERMINE if the patient needs an IV catheter? If it has not been used in the last 24 hours or its use is unlikely in the next 24hrs, consider removal. Consider switching to oral medications.

Chart 1 – Cont.

Instrument 2: Form for Assessment of the Vascular Access Device		
Original version	**Stage II – Synthesis of translations T1/T2 (T1-2)**	**Stage III – Back-translation (BT1/BT2)**
EFFECTIVE function? Does the IV infuse and/or flush well? Follow local policy for flushing and locking.	*EFETIVO funcionamento?* *O cateter IV está eficaz quanto a infusão e/ou flushing?* *Siga as recomendações da instituição quanto ao flushing e lock.*	EFFECTIVE function? Is the IV catheter effective for infusion and/or flushing? Follow institution guidelines for catheter flushing and locking.
COMPLICATIONS at IV site? Pain ≥2/10, redness >1cm, swelling >1cm, discharge, infiltration, extravasation, hardness, palpable cord or purulence. If complications are noted, troubleshoot or remove device.	*COMPLICAÇÕES – local do cateter IV está livre de complicações?* *Dor ≥ /10, hiperemia >1cm, edema >1cm, exsudato, infiltração, extravasamento, endurecimento, cordão venoso palpável ou secreção purulenta.* *Se observado complicações, solucione o problema ou remova o dispositivo.*	COMPLICATIONS – Is the IV catheter site complication-free? Pain ≥2/10, hyperemia >1cm, edema >1cm, exudate, infiltration, extravasation, hardening, palpable venous cord or purulent discharge. If complications are observed, resolve the problem or remove the device
INFECTION prevention Hand hygiene, ANTT, scrub the hub & allow to dry before each IV access.	*INFECÇÃO – Prevenção* *Higienize as mãos, utilize a técnica asséptica sem toque, desinfecte os conectores e espere secar antes de cada manipulação do cateter IV.*	INFECTION – Prevention Sanitize hands, use aseptic no-touch technique, disinfect connectors and allow to dry before each handling of the IV catheter.
DRESSING & securement Goal=Clean, dry, and intact. Change if moist, soiled or loose. Secure IV & tubing.	*DETERMINAR cobertura e estabilização* *Meta=Limpo, seco e intacto. Trocar se estiver úmido, sujo ou solto. Fixar dispositivos IV e de infusão.*	DETERMINE COVERAGE and stabilization Goal=Clean, dry and intact. Change if damp, dirty or loose. Fix IV and infusion devices.
EVALUATE & EDUCATE Evaluate concerns. Educate as needed. Discuss IV plan with patient & family.	*EDUCAR E AVALIAR* *Avalie preocupações. Eduque conforme necessário. Discuta o plano quanto ao uso do cateter IV com o paciente e família.*	EDUCATE AND EVALUATE Assess concerns. Educate as needed. Discuss plan for IV catheter use with patient and family.
DOCUMENT your decision, based on this assessment (choose one) Continue to monitor Dressing/securement change Remove IV and document above.	*DOCUMENTAR sua decisão, baseada nesta avaliação (escolha uma)* *Continuar a monitorar* *Trocar o curativo/ fixação* *Remover o cateter IV.*	DOCUMENT your decision, based on this assessment (choose one). Continue to monitor. Change the coverage/fixation. Remove IV and document above.

There were few suggestions from the committee of experts and these were followed by the authors, aiming for a better understanding of the instruments. Therefore, the item "*Determinar se o paciente precisa do cateter IV?*" was modified to "*Determinar: o paciente precisa do cateter IV?*". The words *"fixar/ fixação*" were replaced with "*estabilizar/ estabilização*" in all items that appear. The word "*curativo*" was replaced and standardized by "*cobertura*". And "*O uso é improvável nas próximas 24h?*" was changed to "*Uso improvável nas próximas 24h?*"

Subsequently, in the fifth stage, pre-testing of the versions adapted to Brazilian Portuguese was carried out with the target population. Hence, 60 nurses participated, of which 52 (86.7%) were female with a mean age of 34.3 years (standard deviation of 6.9). Of these, 19 (31.7%) had a *lato sensu* graduate degree (specialization degree), 30 (50%) a Master's degree and eight (13.3%) a Doctoral degree. Furthermore, 39 (65%) worked in patient care, 16 (26.7%) in teaching and/or research and five (8.3%) in health management/administration.

Internal consistency, using Cronbach's alpha coefficient, was 0.83 for I-DECIDED® Intravenous (IV) Assessment and Decision Tool and 0.81 for Vascular Access Device Assessment Trial Form. The final version of the instruments (Figures 2 and 3) was submitted and approved by corresponding author.

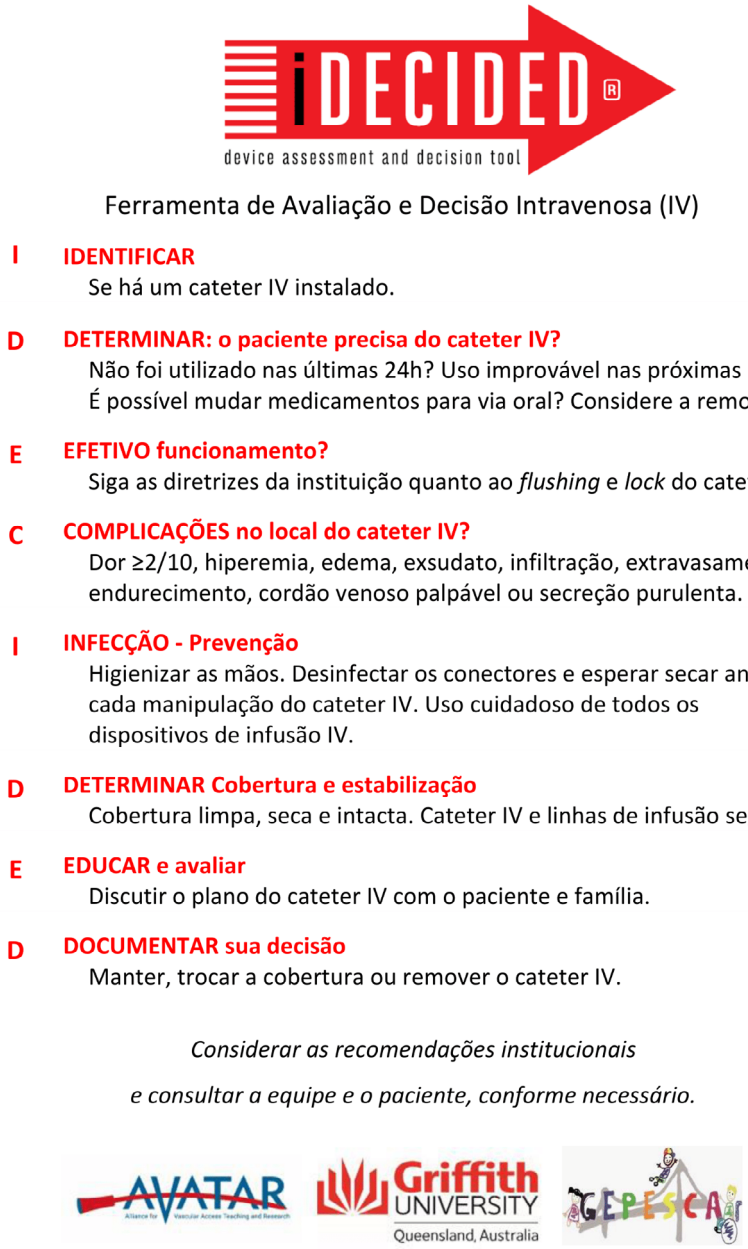

Figure 2 – I-DECIDED® Intravenous (IV) Assessment and Decision Tool.

FORMULÁRIO PARA AVALIAÇÃO DO DISPOSITIVO DE ACESSO VASCULAR

Hospital.....Setor.....

(Fixar a etiqueta de identificação do paciente aqui)

Número do registro do paciente:

Nome do paciente:

Data de nascimento: Sexo: ☐ M ☐ F

I-DECIDED® Ferramenta de Avaliação e Decisão Intravenosa (IV)

Se o cateter IV não for necessário, não funcionar ou apresentar alguma complicação, deve ser removido o mais rápido possível.

Sempre considere as recomendações institucionais e consultar a equipe e o paciente conforme necessário.

Marque o local do cateter IV com X

Detalhes sobre a inserção do cateter IV	
Data:	Hora:
Tamanho/Calibre:	Local da inserção:
Indicação para o cateter IV:	
Número de tentativas de inserção:	
Inserido por (pessoa ou departamento):	
Comentários sobre cateter IV:	
Remoção do cateter IV:	
Data:	
Motivo:	
Removido por:	

Avaliação do cateter IV e registro de decisão *Assinale quando realizado*	**Data**	Dia da inserção			Dia 1			Dia 2			Dia 3			Dia 4		
		M	T	N	M	T	N	M	T	N	M	T	N	M	T	N
IDENTIFICAR se há um cateter IV instalado Se um cateter IV tiver sido removido nas últimas 48h, observe o local quanto a flebite pós-infusão.																
DETERMINAR: o paciente precisa do cateter IV? Não foi utilizado nas últimas 24h? Uso improvável nas próximas 24h? É possível mudar medicamentos para via oral? Considere a remoção.																
EFETIVO funcionamento? O cateter IV está eficaz quanto a infusão e/ou flushing? Siga as recomendações da instituição quanto ao *flushing* e *lock*.																
COMPLICAÇÕES - local do cateter IV está livre de complicações? Dor ≥ 2/10, hiperemia > 1cm, edema > 1cm, exsudato, infiltração, extravasamento, endurecimento, cordão venoso palpável ou secreção purulenta. Se observado complicações, solucione o problema ou remova o dispositivo.																
INFECÇÃO – prevenção Higienize as mãos, utilize a técnica asséptica sem toque, desinfecte os conectores e espere secar antes de cada manipulação do cateter IV.																
DETERMINAR cobertura e estabilização Meta = limpa, seca e intacta. Trocar se estiver úmida, suja ou solta. Estabilizar dispositivos IV e linhas de infusão.																
EDUCAR e avaliar Avalie preocupações. Eduque conforme necessário. Discuta o plano quanto ao uso do cateter IV com paciente e família																
DOCUMENTAR sua decisão, baseada nesta avaliação *(escolha uma)*																
Continuar a monitorar																
Trocar cobertura/ estabilização																
Remover o cateter IV																
Iniciais																

DOCUMENTAR ALTERAÇÕES NO PRONTUÁRIO MÉDICO DO PACIENTE.

FORMULÁRIO PARA AVALIAÇÃO DO DISPOSITIVO DE ACESSO VASCULAR

Figure 3 – Vascular Access Device Assessment Trial Form.

DISCUSSION

I-DECIDED® tool was translated into Portuguese and adapted to the Brazilian context. In order to use instruments originally developed for a specific context and population, it is imperative to carry out not only translation, but also cultural adaptation, in order to preserve their content validity. Therefore, carrying out cross-cultural adaptation requires adopting a rigorous method to ensure equivalence between the original and the translated and adapted version[14,18].

Taking this aspect into consideration, cross-cultural adaptation stages were conducted strictly in accordance with Beaton *et al*. (2000; 2007) recommendations. This methodology is widely recognized and used in conducting studies in this area[19–20]. Systematic reviews of evidence related to translation and cross-cultural adaptation of various instruments showed that this chosen methodology is the most used[21–22].

Throughout the process, no significant obstacles were identified that could make cross-cultural adaptation unfeasible, since the original instruments have an intentionally simplified structure. The initial translators were instructed to, if possible, maintain the acronym of the original tool, and this request was fulfilled by both translators. It is worth mentioning that, as recommended, one of the initial translators had training in the health area, as reported, which gave him/her the necessary proximity to the topic of the tool.

After the initial translations, small adjustments were necessary and carried out jointly between the translators (T1 and T2) and the researchers. Modifications made were maintained by back-translators, which is a fundamental procedure to detect possible disparities in translations[23]. As important as ensuring that a translation is an accurate representation of original content, it is essential to ensure transcultural equivalence of a translated tool so that it can subsequently be tested with the target population to assess its understanding and clarity[15].

Content validity was established by ensuring semantic, idiomatic, experiential and conceptual equivalence for each item in the tool, according to previously defined criteria. This involved an assessment of agreement among evaluators in relation to content adequacy to measure what an instrument aims to assess. In accordance with the guidelines followed, it is assumed that the psychometric properties of the original instrument were preserved in the adapted version[14,15].

A solid equivalence was observed between the Portuguese version and the original version based on content validity. This was determined through CVI analysis, resulting from assessment carried out by the committee of experts and the results obtained in pre-testing. The mean CVI of the translated and adapted version of I-DECIDED® tool into Brazilian Portuguese was 0.94, a value similar to the mean CVI of the original tool, which reached 0.91 for vascular access epxerts and 0.93 for professionals with experience in PIVC[11]. In a study carried out with the original version, Cronbach's alpha coefficient of I-DECIDED® tool was 0.87[11], a value similar to that obtained in the adapted tool, which was 0.83. This reliability value suggests that the tool is capable of accurately measuring the proposed clinical competencies[16]. In the future, psychometric tests can be carried out in order to test the reliability of the adapted tool in clinical settings. However, they are not mandatory for creating and approving the final version of the adapted tool[14–15].

A cross-sectional study that assessed the prevalence of complications and idle PIVC in five Latin American countries, including Brazil, showed that: 9% of PIVC were idle; 6% contained blood in extension connections; 9% had some complication; 14% of dressings were not clean, dry and intact; and documentation about PIVC was absent from the records of 52% of insertions performed by nursing technicians and 41% by nurses[24]. Therefore, cross-cultural adaptation of I-DECIDED® tool to the Brazilian context is important, since improvement actions for such problems are addressed by the tool[10].

Currently, in Brazil, hospitals use standard operating procedures and bundles for insertion, maintenance and prevention of PVIC-related bloodstream infections. However, I-DECIDED® tool aims not only to guide healthcare professionals in assessing aspects of PIVC management, but also to assist in making decisions related to the need for and effective functioning of the device[10]. Furthermore, it is a clear and concise tool for analysis and clinical judgment of the main PIVC care actions[10].

The final version of I-DECIDED® tool was approved by corresponding author. It is important to highlight that, to date, there are no studies related to I-DECIDED® translation and cross-cultural adaptation to other countries and languages, which makes this an unprecedented process.

Although a higher number than recommended was achieved, it is important to highlight that the limitation of this study was the low adherence of professionals willing to be part of the committee of experts. Tool clinical validity was not performed, which is another limitation of this study.

CONCLUSION

The Brazilian Portuguese version of I-DECIDED® tool as well as Vascular Access Device Assessment Trial Form were considered cross-culturally adapted for use by healthcare professionals in Brazil. Assessment of semantic, idiomatic, experiential and conceptual equivalences revealed an adaptation with a high content validity index.

With I-DECIDED® tool, nursing professionals have at their disposal a valuable resource to assess and support decision-making that allows them to early identify PIVC-related problems and devices that are no longer necessary, contributing to patient safety and well-being.

REFERENCES

1. Marsh N, Larsen EN, Takashima M, Kleidon T, Keogh S, Ullman AJ, et al. Peripheral Intravenous Catheter Failure: A Secondary Analysis of Risks from 11,830 Catheters. Int J Nurs Stud [Internet]. 2021 [cited 2023 Aug 11];124:104095. Available from: https://doi.org/10.1016/j.ijnurstu.2021.104095
2. Marsh N, Barruel GR, Adzemovic T, Larsen EN, Rickard CM, Pelecanos A, et al. Awareness of Peripheral Intravenous Catheters Among Nurses, Physicians, and Students. J Patient Saf [Internet]. 2022 [cited 2023 Aug 11];18(7):e1041-6. Available from: https://doi.org/10.1097/PTS.0000000000001020
3. Walker RM, Pires MPO, Ray-Barruel G, Cooke M, Mihala G, Azevedo SS, et al. Peripheral Vascular Catheter Use in Latin America (The Vascular Study): A Multinational Cross-Sectional Study. Front Med [Internet]. 2023 [cited 2023 Aug 12];9:1039232. Available from: https://doi.org/10.3389/fmed.2022.1039232
4. Alexandrou E, Barruel GR, Carr PJ, Frost SA, Inwood S, Higgins N, et al. Use of Short Peripheral Intravenous Catheters: Characteristics, Management, and Outcomes Worldwide. J Hosp Med [Internet]. 2018 [cited 2023 Aug 11];13(5):E1-E7. Available from: https://doi.org/10.12788/jhm.3039
5. Ullman AJ, Takashima M, Kleidon T, Ray-Barruel G, Alexandrou E, Rickard CM. Global Pediatric Peripheral Intravenous Catheter Practice and Performance: A Secondary Analysis of 4206 Catheters. J Pediatr Nurs [Internet]. 2020 [cited 2023 Aug 12];50:e18-e25. Available from: https://doi.org/10.1016/j.pedn.2019.09.023
6. Corley A, Ullman AJ, Mihala G, Ray-Barruel G, Alexandrou E, Rickard CM. Peripheral Intravenous Catheter Dressing and Securement Practice Is Associated with Site Complications and Suboptimal Dressing Integrity: A Secondary Analysis of 40,637 Catheters. Int J Nurs Stud [Internet]. 2019 [cited 2023 Aug 13];100:103409. Available from: https://doi.org/10.1016/j.ijnurstu.2019.103409
7. Gorski LA, Hadaway L Hagle ME, Broadhurst D, Clare S, Kleidon T, et al. Infusion Therapy Standards of Practice. J Infus Nurs [Internet]. 2021 [cited 2023 Aug 13];44(1S):S1-S224. Available from: https://doi.org/10.1097/NAN.0000000000000396

8. Mavillard IB, García GP, Fernández IF, Calero MÁR, Labrador CP, Sánchez EC. Care of Peripheral Intravenous Catheters in Three Hospitals in Spain: Mapping Clinical Outcomes and Implementation of Clinical Practice Guidelines. PLoS One [Internet]. 2020 [cited 2023 Aug 12];15(10):e0240086. Available from: https://doi.org/10.1371/journal.pone.0240086

9. Xu HG, Keogh S, Ullman AJ, Marsh N, Tobiano G, Rickard CM, et al. Implementation Frameworks, Strategies and Outcomes Used in Peripheral Intravenous Catheter Studies: A Systematic Review. J Clin Nurs [Internet]. 2023 [cited 2023 Aug 13];32(17-18):6706-22. Available from: https://doi.org/10.1111/jocn.16671

10. Barruel GR, Cooke M, Mitchell M, Chopra V, Rickard CM. Implementing the I-DECIDED Clinical Decision-Making Tool for Peripheral Intravenous Catheter Assessment and Safe Removal: Protocol for an Interrupted Time-Series Study. BMJ Open [Internet]. 2018 [cited 2023 Aug 11];8(6):e021290. Available from: https://doi.org/10.1136/bmjopen-2017-021290

11. Barruel GR, Cooke M, Chopra V, Mitchell M, Rickard CM. The I-DECIDED Clinical Decision-Making Tool for Peripheral Intravenous Catheter Assessment and Safe Removal: A Clinimetric Evaluation. BMJ Open [Internet]. 2020 [cited 2023 Aug 11];10(1):e035239. Available from: https://doi.org/10.1136/bmjopen-2019-035239

12. Barruel GR, Chopra V, Fulbrook P, Lovegrove J, Mihala G, Wishart M, et al. The Impact of a Structured Assessment and Decision Tool (I-DECIDED®) on Improving Care of Peripheral Intravenous Catheters: A Multicentre, Interrupted Time-Series Study. Int J Nurs Stud [Internet]. 2023 [cited 2023 Sept 18];148:104604. Available from: https://doi.org/10.1016/j.ijnurstu.2023.104604

13. Barruel GR. I-DECIDED – A New Approach to Assessing and Managing Invasive Devices**.** J Can Vasc Access Assoc [Internet]. 2021 [cited 2023 Aug 08];15(3):7-14. Available from: https://assets.cdn.thewebconsole.com/S3WEB4798/images/6233d43939494.pdf

14. Beaton DE, Bombardier C, Guillemin F, Ferraz MB. Guidelines for the Process of Cross-Cultural Adaptation of Self-Report Measures. Spine [Internet]. 2000 [cited 2023 Aug 08];25(24):3186-91. Available from: https://doi.org/10.1097/00007632-200012150-00014

15. Beaton D, Bombardier C, Guillemin F, Ferraz MB. Recommendations for the Cross-Cultural Adaptation of the DASH & QuickDASH Outcome Measures. Instit Work Health [Internet]. 2007 [cited 2023 Aug 08];1(1):1-45. Available from: https://dash.iwh.on.ca/sites/dash/files/downloads/cross_cultural_adaptation_2007.pdf

16. Polit DF, Beck CT. Fundamentos de pesquisa em enfermagem: avaliação de evidências para a prática da enfermagem. 9th ed. Porto Alegre, RS(BR): Artmed Editora; 2018.

17. Barruel GR. I-DECIDED® – A Decision Tool for Assessment and Management of Invasive Devices in the Hospital Setting. Br J Nurs [Internet]. 2022 [cited 2023 Aug 08];31(8):S37-S43. Available from: https://doi.org/10.12968/bjon.2022.31.8.S37

18. Epstein J, Santo RM, Guillemin F. A Review of Guidelines for Cross-Cultural Adaptation of Questionnaires Could not Bring Out a Consensus. J Clin Epidemiol [Internet]. 2015 [cited 2023 Aug 20];68(4):435-41. Available from: https://doi.org/10.1016/j.jclinepi.2014.11.021

19. Lima GA, Lima FET, Florencio SDSG, Fontenele MGM, Ventura MWS, Barbosa LP, et al. Translation and Cross-Cultural Adaptation of the Parental Perception on Antibiotics Scale: Brazilian Version. Acta Paul Enferm [Internet]. 2023 [cited 2023 Sept 18];36:eAPE03292. Available from: https://doi.org/10.37689/acta-ape/2023AO03292

20. Mata LRFD, Azevedo C, Menezes AC, Chagas SDC, Izidoro LCDR, Estevam FEB, et al. Cross-Cultural Adaptation and Validation of the Urinary Incontinence Scale After Radical Prostatectomy for the Brazilian Context. Rev Gaúcha Enferm [Internet]. 2022 [cited 2023 Aug 20];43:e202110163. Available from: https://doi.org/10.1590/1983-1447.2022.20210163.en

21. Shafiee E, MacDermid JC, Walton D, Vincent JI, Grewal R. Psychometric Properties and Cross-Cultural Adaptation of the Patient-Rated Tennis Elbow Evaluation (PRTEE); A Systematic Review and Meta-Analysis. Disabil Rehabil [Internet]. 2022 [cited 2023 Aug 20];44(19):5402-17. Available from: https://doi.org/10.1080/09638288.2021.1938248

22. Silva RCPC, Amaral ACS, Quintanilha AKS, de Almeida VAR, Rodrigues MVF, Oliveira AJ, et al. Cross-Cultural Adaptation of Body Image Assessment Instruments for University Students: A Systematic Review. Psicol Reflex Crit [Internet]. 2021 [cited 2023 Aug 21];34(1):11. Available from: https://doi.org/10.1186/s41155-021-00177-w

23. Graeff MDS, Almeida MA, Gálvez AMP, Nomura ATG, Lunelli RP, Silva TSD. Cross-Cultural Adaptation and Validation of Instrument to Measure Nursing Care Dependency. Rev Gaucha Enferm [Internet]. 2022 [cited 2023 Aug 21];43:e20210135. Available from: https://doi.org/10.1590/1983-1447.2022.20210135.en

24. Walker RM, Pires MPO, Barruel GR, Cooke M, Mihala G, Azevedo SS, et al. Peripheral Vascular Catheter Use in Latin America (the Vascular Study): A Multinational Cross-Sectional Study. Front Med [Internet]. 2023 [cited 2023 Nov 29];9:1039232. Available from: https://doi.org/10.3389/fmed.2022.1039232

NOTES

ORIGIN OF THE ARTICLE
This work is linked to the projects – "*Projeto Tecnologias Educacionais e Assistencial para a Prevenção de Eventos Adversos de Dispositivos de Acessos Vasculares em Pacientes Pediátricos*", (CNPq 09/2022, Process 309565/2022-7), and "*Projeto Intervenções tecnológicas para prevenção de eventos adversos no uso de dispositivo de acesso vascular na população pediátrica*" (CNPq/MCTI Call10/2023, Process 406103/2023-2).

CONTRIBUTION OF AUTHORITY
Study design: Silva TL, Rocha PK.
Data collection: Silva TL, Rocha PK.
Data analysis and interpretation: Silva TL, Ray-Barruel G, Ullman A, Rocha PK.
Discussion of results: Silva TL, Ray-Barruel G, Ullman A, Rocha PK.
Writing and/or critical review of content: Silva TL, Ray-Barruel G, Ullman A, Rocha PK.
Review and final approval of the final version: Silva TL, Ray-Barruel G, Ullman A, Rocha PK.

FUNDING INFORMATION
This work was carried out with the support of the Brazilian National Council for Scientific and Technological Development (CNPq – *Conselho Nacional de Desenvolvimento Científico e Tecnológico*).

APPROVAL OF ETHICS COMMITTEE IN RESEARCH
Approved by the Ethics Committee in Research of the *Universidade Federal de Santa Catarina*, under Opinion 5.674.120/2022 and Certificate of Presentation for Ethical Consideration 61026722.1.0000.0121.

CONFLICT OF INTEREST
There is no conflict of interest.

TRANSLATED BY
Leonardo Parachú.

HISTORICAL
Received: September 28, 2023.
Approved: December 19, 2023.

CORRESPONDING AUTHOR
Thiago Lopes Silva.
thiagoslopes@outlook.com