TRANSLATION AND CROSS-CULTURAL ADAPTATION OF THE KNOWLEDGE TRANSLATION PLANNING TEMPLATE FOR THE BRAZILIAN CONTEXT

Catiele Raquel Schmidt[1]
Melanie Barwick[2,3]
Elisiane Lorenzini[1]

[1]Universidade Federal de Santa Catarina, Programa de Pós-graduação de Enfermagem. Florianópolis, Santa Catarina, Brasil.
[2]University of Toronto, Hospital for Sick Children. Toronto, Canadá.
[3]University of Toronto, Dalla School of Public Health, Department of Psychiatry. Toronto, Canadá.

ABSTRACT

Objective: to translate, cross-culturally adapt, and validate the content of the *Knowledge Translation Planning Template*, a research dissemination planning tool, into Brazilian Portuguese.

Method: this is a methodological study, sequentially divided into six stages: initial translation, translation synthesis, back-translation, judges' committee, pre-test, and approval of the adapted version by the instrument author. The judge's committee assessed content validity using the modified Kappa and Content Validity Index. The test was conducted with teachers and students from a Federal University of Santa Catarina graduate program.

Results: the process of translating and back-translating the tool showed no discrepancies in terms of meaning. The committee was composed of seven judges who carried out semantic, cultural, and conceptual evaluations and made notes on the translation of the content. At this stage, the content validity showed excellent values for the Content Validity Index and modified Kappa, with 0.99 and 0.816, respectively. The tool was tested with 30 teachers and postgraduate students, where 90% of the respondents considered the tool to be sufficiently comprehensive and that all the items were relevant to the purpose of the instrument. In the last stage, the documents were analyzed together with the author of the original tool and the final version was approved.

Conclusion: the *Modelo de Planejamento de Tradução do Conhecimento* results from a careful translation process, cross-cultural adaptation, and tool content validation. This has resulted in a tool that is applicable and understood by the target audience, which shows consistency in the equivalence of translation and cross-cultural adaptation for Brazil.

DESCRIPTORS: Information dissemination. Validation studies. Nursing. Dissemination planning. Knowledge translation.

TRADUÇÃO E ADAPTAÇÃO TRANSCULTURAL DA FERRAMENTA *KNOWLEDGE TRANSLATION PLANNING TEMPLATE* PARA O CONTEXTO BRASILEIRO

RESUMO

Objetivo: realizar a tradução, adaptação transcultural e validar o conteúdo da *Knowledge Translation Planning Template* para língua portuguesa do Brasil.

Método: estudo metodológico, que seguiu seis etapas: tradução inicial, síntese da tradução, retrotradução, comitê de juízes, pré-teste e aprovação da versão adaptada pela autora da ferramenta. No comitê de juízes a validade do conteúdo foi calculada por meio do Índice de Validade de Conteúdo e Kappa modificado. O pré-teste foi realizado com docentes e discentes de um programa de pós-graduação da Universidade Federal de Santa Catarina.

Resultados: o processo de tradução e retrotradução da ferramenta não apresentou discrepâncias em termos de significado. O comitê foi composto por sete juízes que realizaram avaliação semântica, cultural, conceitual e realizaram apontamentos quanto à tradução do conteúdo. Nesta etapa, a validade de conteúdo apresentou valores excelentes de Índice de Validade de Conteúdo e Kappa modificado, com 0,99 e 0,816 respectivamente. A ferramenta foi testada com 30 docentes e discentes de pós-graduação, onde 90% dos respondentes consideraram a ferramenta suficientemente abrangente, e que todos os itens são relevantes ao propósito da ferramenta. Na última etapa, os documentos foram analisados em conjunto com a autora da ferramenta original e a versão final foi aprovada.

Conclusão: a ferramenta Modelo de Planejamento de Tradução do Conhecimento é resultado de um processo criterioso de tradução, adaptação transcultural e validação de conteúdo da ferramenta. Isso gerou uma ferramenta aplicável e compreendida pelo público-alvo, a qual apresenta consistência na equivalência da tradução e adaptação transcultural para o Brasil.

DESCRITORES: Divulgação de informação. Estudos de validação. Enfermagem. Planejamento. Tradução do conhecimento.

TRADUCCIÓN Y ADAPTACIÓN INTERCULTURAL DE LA PLANTILLA DE PLANIFICACIÓN PARA LA TRADUCCIÓN DE CONOCIMIENTO AL CONTEXTO BRASILEÑO

RESUMEN

Objetivo: realizar la traducción, adaptación transcultural y validar el contenido de la Plantilla de Planificación para la Traducción del Conocimiento para el idioma portugués de Brasil.

Método: estudio metodológico que siguió seis etapas: traducción inicial, síntesis de la traducción, retrotraducción, comité de expertos, pretest y aprobación de la versión adaptada por la autora de la herramienta. Em el comité de expertos, la validez del contenido se calculó mediante el índice de validez de contenido y el Kappa modificado. El pre-test se realizó con profesores y estudiantes de un programa de postgrado en la Universidad Federal de Santa Catarina.

Resultados: el proceso de traducción y retrotraducción de la herramienta no mostró discrepancias en términos de significado. El comité estuvo formado por siete expertos que evaluaron los aspectos semánticos, culturales y conceptuales y realizaron observaciones sobre la traducción del contenido. En esta etapa, la validez de contenido mostró valores excelentes para el Índice de Validez de Contenido y el Kappa modificado, con 0,99 y 0,816 respectivamente. La herramienta se probó con 30 profesores y estudiantes de posgrado, donde el 90% de los encuestados consideraron que la herramienta era lo suficientemente completa y que todos los elementos eran pertinentes para el propósito de la herramienta. En la fase final, se analizaron los documentos junto con la autora de la herramienta original y se aprobó la versión final.

Conclusión: el "*Modelo de Planejamento de Tradução do Conhecimento*" es el resultado de un proceso riguroso de traducción, adaptación transcultural y validación de contenido de la herramienta. El resultado fue una herramienta aplicable y comprensible para el público destinatario, y que muestra coherencia en la equivalencia de la traducción y la adaptación transcultural para Brasil.

DESCRIPTORES: Revelación. Estudio de validación. Enfermería. Planificación. Ciencia Traslacional.

INTRODUCTION

Scientific evidence is essential in developing public policies, improving health care, and advancing society. However, even in well-structured published studies, it is necessary to bridge the gap between science and the real world to facilitate the implementation of evidence-based actions and innovations[1].

In this sense, initiatives to effectively disseminate and implement scientific evidence are recognized and encouraged in some countries, such as Canada. Over the last decade, significant advances in the theory and practice of *Knowledge Translation* (KT) have led to a new generation of approaches and strategies for sharing evidence and facilitating and evaluating behavioural, policy and organizational changes, including a greater focus on dissemination and implementation. The magnitude, variety, and complexity of new evidence in KT present challenges for researchers and knowledge users (KUs) in identifying and choosing approaches ideally suited to their needs.

Knowledge Translation (KT) is "a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically sound application of knowledge to improve people's health, providing more effective health services and products and strengthening the health care system"[2:5]. In Brazil, Knowledge Translation (KT) is a term adopted and used by the National Council for Scientific and Technological Development (CNPq). It is a broad concept involving the exchange (diffusion, dissemination), management, synthesis, or application (implementation) of knowledge within a complex system of interactions between researchers and users. The last decade has resulted in various classifications of KT that allow for greater distinction between diffusion, dissemination, commercialization, technology transfer, knowledge broker, knowledge management, knowledge mobilization, translational research, implementation and implementation science, which come under the umbrella of KT[3].

KT aims to ensure that people understand and benefit from research evidence. KT provides a means to share scientific knowledge, raise awareness, influence behaviour, modify practices and support political decisions[4]. It should be noted that dissemination and implementation require related but different methods. No single model, theory, or strategy can address all the aspects surrounding these initiatives. To be effective requires engaging knowledge users and utilizing processes and strategies that align with the goal, purpose, intended benefit, KU needs and preferences[5].

The literature identifies the application of KT in different areas, such as the management of thirst in surgical patients with burns[6], to improve the culture of safety in health institutions[7–8], in the organization of networks for the use of scientific evidence in the development and improvement of public health policies[9] to develop, implement and evaluate interventions aimed at improving nutritional care practices and dietary intake among patients undergoing colorectal surgery[10]. At a global level, the World Health Organization (WHO) uses KT to promote maternal and child health and well-being, among other initiatives[11].

When a new research project is conceived, it is necessary to plan for dissemination to facilitate how the research evidence will be shared, with whom, and to what benefit[12]. To this end, tools are available in the literature to help with this process, such as the *Knowledge Translation Planning Template (KTPT)*[4,13]. The KTPT tool was developed by Melanie Barwick in 2008. It consists of a 13-item framework to guide the development of a KT dissemination plan[13]. In Brazil, no tools are available in Portuguese to facilitate dissemination planning. However, there have been widespread transitions in how research is designed, implemented and evaluated in recent years. Specifically in nursing, nurses have adopted essential roles in creating knowledge for health and nursing. In general,

KT requires action on the part of nurses to study, share and teach strategies to minimize the gap between knowledge and practice[14].

To contribute and provide a tool to facilitate the KT dissemination planning process, this study aimed to translate, cross-culturally adapt, and validate the content of the *Knowledge Translation Planning Template* for the Brazilian Portuguese language.

METHOD

This is a methodological study of the translation, cross-cultural adaptation, and content validation of the *Knowledge Translation Planning Template* in Brazilian Portuguese. The tool developer provided formal authorization and is a co-author for this study.

Knowledge Translation Planning Template

The *Knowledge Translation Planning Template* was developed to assist in the KT dissemination planning process. It is available in English, French, Spanish and after execution of this project, in Portuguese on The Hospital for Sick Children (SickKids) website. It has an interactive layout and presents 13 key components of knowledge translation planning, namely: (1) identifying dissemination project partners; (2) describing partner engagement; (3) identifying partner roles and (4) required KT expertise; (5) identifying knowledge users (KUs) and aligned (6) main messages (MM) (7) KT goals; (8) KT strategies for each KU; (9) describing the KT process (integrated and end-of-project) and (10) KT evaluation of identified goals; (11) required resources and (12) budget items; and (13) describing the executing of the KT plan[13].

The *Knowledge Translation Planning Template* is universally applicable in all four scientific pillars: basic, clinical, health services and population health, and is relevant for various sectors, including health, mental health, education, social sciences, agriculture, environmental sciences, and others. It is important to note that KT dissemination plans can vary according to the area in which they will be applied; the aim is to develop a KT dissemination plan appropriate for each research project, the knowledge users and unique KT objectives[4,13]. Chart 1 provides definitions of the KTPT components as taught in the *SickKids' Knowledge Translation Program* courses[4,13].

Chart 1 – Definition of the items that make up Knowledge Translation planning based on the Knowledge Translation Planning Template. Florianópolis, SC, Brazil, 2023.

Chart	Definition
1 – Project partners	Before you begin, consider which partnerships will ensure the success of your project. Identify who impacts your work and who will be impacted by your work. Project partners may be engaged in the research and/or dissemination work, as appropriate to your context.
2 – Partner involvement	Identifying the degree of partner involvement, planning how and when participation will take place, to organize the research and/or dissemination process. Your project activities may involve a little or a lot of collaboration. You can mix and match when partners are involved to fit your project needs.
3 – Partner roles	Identify the roles and make sure that the project partners understand their part within the research team. The plan for KT* needs to define the role of each partner in the project, their expectations, and responsibilities.
4 – KT Expertise	To determine the degree of KT expertise required for your project, consider the needs and breadth of your KT activities and plan.

Chart 1 – Cont.

Chart	Definition
5 – Knowledge users	Knowing what you want to say and why requires knowing who you want to reach. Think about who needs to know about what you've learned. Who is going to be interested in the research findings? Who will value this research knowledge?
6 – Main Messages	Identify the main messages of the study, bearing in mind that these may change as the data is evaluated and discovered. In addition, it is important to adapt the messages to the group of knowledge users to which they will be directed.
7 – KT Goals	Identify the objectives of KT, or the reasons for sharing information. An effective KT plan needs objectives tailored to each group of knowledge users.
8 – KT Strategies	Identify the KT strategies used to share their messages. After identifying the knowledge users, key messages, and specific KT goals for these knowledge users, it is necessary to consider the KT strategies. The KT plan needs to explain how knowledge users will receive this content. Therefore, KT strategies and goals must be aligned with the target audience, considering the scientific evidence and contextual factors for each of these strategies. Be sure to look at the KT literature to see what strategies have been shown to be effective for addressing a particular KT goal. A KT plan needs to explain how you will reach the relevant knowledge users. So, your KT strategies must align with the knowledge user audience and KT goal for that audience.
9 – KT Process	At this stage, you can specify when knowledge translation will occur: will it be through integrated KT (iKT), end-of-grant KT, or a bit of both?
10 – KT Evaluation	Identify the estimated KU benefits of the KT activities, considering the time and resources available. Evaluating whether the KT plan has been successful helps the researcher achieve their objectives and determine impacts. The result of this evaluation can inform academic promotion, final reports, curriculum vitae, peer-reviewed publication, and organizational performance evaluation. Evidence from research can have a wide impact on health/well-being, clinical practice, policies.
11 – Resources needed	Assess all possible and necessary resources to carry out the KT plan. For example: board of directors, financial, human, leadership, management, volunteers, network. These resources may change as the KT plan develops.
12 – Budget items	Consider all potential budget items associated with the proposed KT activities. The KT resources identified in Component 11 must be mapped to the budget. It is necessary to estimate the cost per item in the budget, so that it is possible to estimate the total budget of the KT plan. These items and costs can be included in your project budget, where permitted by the research funder.
13 – Executing your KT plan	Think of this component as your KT methods —what you plan to do. Consider the actions you will take to bring your KT strategies to life. It is particularly important to describe how your integrated KT activities will be achieved. Don't just list the knowledge users you've invited to work alongside you. Rather, describe how they will be engaged, how you will support that engagement and the benefits they will derive from their involvement.

Source: SICKKIDS[4]; BARWICK[13].
*KT: Knowledge Translation

Procedures for translation, cross-cultural adaptation, and content validation

The method for translating and cross-culturally adapting the *Knowledge Translation Planning Template* tool into Brazilian Portuguese followed the steps recommended by Beaton[15], internationally recognized for the translation and cross-cultural adaptation of instruments, with the following steps: translation, synthesis, back-translation, review by a committee of judges, pre-testing and presentation of the documentation of the entire process to the authors of the instrument[15], as shown in Figure 1.
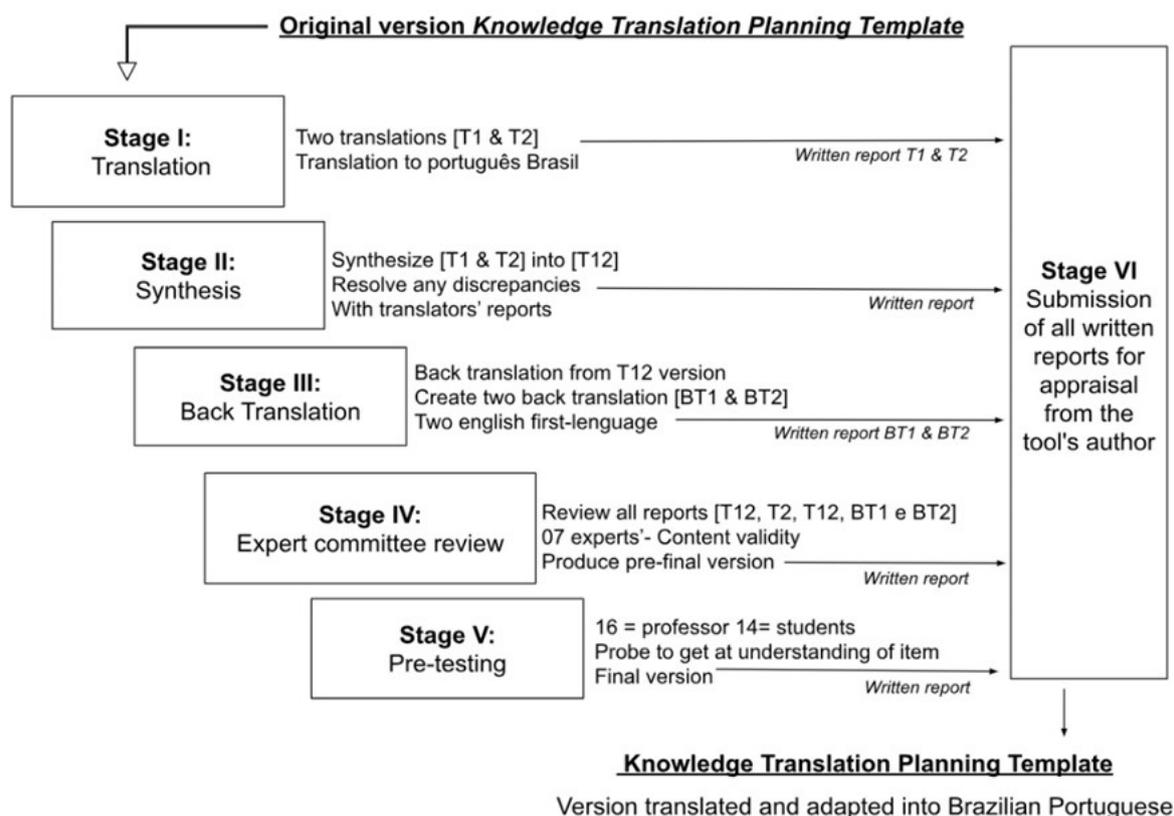

Figure 1 – Translation stages, cross-cultural adaptation, and content validation of the *Knowledge Translation Planning Template* in Brazil. Florianópolis, SC, Brazil, 2023.
Source: Adapted from Beaton[15].

Stage I: The tool was initially translated by two independent translators whose mother tongue was Brazilian Portuguese and who were fluent in the language of the original tool, i.e., English. One of the translators was familiar with the concepts and objectives of the study, while the second translator was unfamiliar with the topic and study area. At this stage, two independently translated versions were produced: T1 and T2[15].

Stage II: The two translations were synthesized in the second stage, resulting in a consensus between the translators and researchers. A detailed report described the process of synthesizing the items and identified potential inconsistencies or problems so as not to compromise the adaptation of the tool[15], producing the T12 version.

Stage III: In the third stage, back-translation was carried out, i.e., the T12 version was back-translated into the original language (English). Two blinded independent translators performed the back-translation from the synthesis version created for the target language (Portuguese) to ensure that the translated version accurately expressed the original version[15].

Stage IV: In the fourth stage, the tool was sent to a committee of judges to assess the agreement on the content of the translated version of the tool based on an analysis of the original tool and each translation (T1, T2, the synthesis of T12, RT1, RT2) (Figure 1) in comparison with the original.

Fegring's framework (adapted)[16] was used as the criteria for selecting the committee of judges: Working for at least three years as a doctoral researcher (3 points), being an author in articles published in national or international journals, experience in *Knowledge Translation* (2 points); having practical experience as a *Stakeholder* in a research project (2 points); experience in the validation of instruments or content (2 points); taking part in research groups/projects related to *Knowledge Translation* (3 points); or taking part in refresher or training courses in *Knowledge Translation* (3 points).

The invitation was sent to 10 researchers who scored at least five points on the Fegring criteria[16]. The invitation was e-mailed with a link to access the documents to be evaluated along with the ICFs. Reminders were sent when the deadline for filling in the form exceeded ten days.

Semantic/idiomatic, cultural, and conceptual equivalence was carried out at this stage. In *semantic equivalence,* questions related to grammar and vocabulary were assessed. In *idiomatic equivalence,* equivalent expressions were formulated for colloquialisms and expressions specific to the language, which are difficult to translate. In *experiential* or cultural *equivalence*, the consistency between the terms used and the lived experiences of the population for whom the instrument is intended was assessed. *Conceptual equivalence* involves assessing whether the concepts and expressions used in the original tool are equivalent to the translation into the target language so that the original content is preserved[15]. The KTPT's semantic/idiomatic, cultural and conceptual equivalence were evaluated using a 4-point Likert scale. To do this, the expert assigned a score of 1=not relevant or not representative; 2= needs major revision to be representative; 3= needs minor revision to be representative; 4= relevant or representative[17].

Following this rating activity, an Excel® spreadsheet was organized to calculate the instrument's Content Validity Index (CVI). The calculation was made using ratings 3 and 4, divided by the number of experts. After tabulation, data were analyzed using the *Statistical Package for the Social Sciences* – SPSS 25. The agreement rate was calculated using the Content Validity Index (CVI), which measures the judges' agreement on the representativeness of the items in relation to the tool. The CVI agreement value can vary from 0.70 to 1.00[18–19]. This study adopted a value of 0.80 (80%) as the standard for establishing excellent content validity.

In addition to an overall agreement, the modified Kappa coefficient (K) was calculated, which is an adjusted agreement indicator ranging from "minus 1" to "plus 1"; the closer to 1, the better the level of agreement between the judges. The distribution and respective levels of interpretation of the modified Kappa were moderate (0.40 to 0.59), good (0.60 to 0.74), and excellent (>0.74)[20]. The criterion for acceptance was agreement greater than 0.61 between the judges.

Pre-testing was performed in stage V, using the version of the tool from stage IV[15]. The tool was sent to students and teachers in a postgraduate nursing program to evaluate the tool as a whole in terms of the scope and relevance of the set of items. The invitation to take part in the pre-test was sent via email to the graduate program's communication group and WhatsApp group. Those who agreed to participate in the research were sent the Informed Consent Form (ICF) and the questionnaire. At this stage, the following inclusion criteria were considered: being a professor, researcher or student participating in research at the graduate Nursing Program at the Federal University of Santa Catarina. No exclusion criteria were applied. Thirty subjects were adequate for the pre-test stage as recommended by the methodological framework[15]. The sample was obtained through simple random probability sampling with a margin of 10 participants in case of refusals.

Stage VI: In the sixth and final stage, the reports and final version were shared with the tool's author, highlighting the methodological rigour recommended by the literature and used throughout the research.

This study was approved by the Research Ethics Committee of the Federal University of Santa Catarina, and carried out between November 2021 and November 2022. The ethical precepts of research on human beings established by Resolution 466/2012 of the National Health Council were followed. The bioethical principles of autonomy, non-maleficence, beneficence, justice, and equity were obeyed.

RESULTS

The "Knowledge Translation Planning Template" was translated and validated into Brazilian Portuguese as "*Modelo de Planejamento de Tradução do Conhecimento*." The T1 and T2 versions were very similar, but there was a need to review health-related terms. T2 demonstrated greater alignment with the original tool than T1. The T2 version was finalized after two rounds of meetings between the researchers and a third translator. In the back-translation, the two translations carried out independently (RT1 and RT2) were compared to the original version, and both were analogous to the original version, with a few different points but no discrepancies in meaning. The committee of judges then analyzed the consolidated version.

Of the ten researchers invited, seven agreed to take part in the judging committee. The feedback process lasted approximately 70 days. The judging committee was comprised of researchers from different regions of Brazil (south, southeast and central-west), with an average age of 44, all female nurses, six of whom had a doctorate and one a master's degree, six university professors and researchers, with an average of 25 years working in the field, ranging from 12 to 44 years, and one judge who has been working in the field of English translation for ten years. Three judges attended the *Knowledge Translation Summer Course the Canadian Coalition for Global Health Research* offered in 2021.

The judging committee assessed the tool's semantic, idiomatic and conceptual equivalence, which resulted in suggestions for improving writing and concordance in Portuguese. Some terms elicited discussion as they were uncommon in Brazil's scientific community: Knowledge *Translation, Knowledge Broker* and *Advocacy.* Concerning the term *Knowledge Translation,* presented right in the tool's title, Judge 6 proposed including a guidance note regarding its' meaning and pointing out a divergence in the literature between *translation* and *knowledge translation*. Judge 2 suggested keeping the term "*advocacy*" (in Box 10 of the tool) in English, as it does not have a definition in Portuguese. Judge 6 also suggested using 'consultant/knowledge specialist' for the term *"knowledge broker/specialist"* in "Budget Items" (Box 12 of the tool), as the expression is uncommon in the Brazilian context.

Following the assessment of the judging committee, two meetings were held between the researchers and a translator to produce a detailed report describing the level of agreement and the items suggested by the judges. Chart 2 shows a summary of the judges' comments.

Chart 2 – Summary of judges' comments based on the translation analysis of the content of the *Knowledge Translation Planning Template* in Brazil. Florianópolis, SC, Brazil, 2023.

Item	Summary of Comments	Final version
Title	Judge 6 – My main reflection is on the translation of "*knowledge translation*". In Brazil, some authors use the term "*tradução*" and others "*translação*", which have different meanings. I recommend including a footnote with the definition that the authors consider to be "knowledge translation", to make it explicit in the model.	*Modelo de Planejamento de Tradução do Conhecimento*
Introduction	Judge 1 – I don't think the phrase "*Comece com o item 1 e siga até o item 13 para abordar os componentes essenciais do processo de planejamento de TC**" is clear to the Brazilian public because the places to tick are not numbered. Judge 6 – Maybe explain that the additional material is in English. Example: *"Dois módulos de ensino/aprendizagem on-line (em inglês) estão disponíveis para suporte adicional".*	*Comece com o item 1 e siga até o item 13 [...]* *[...] Dois módulos de ensino/ aprendizagem on-line estão disponíveis para suporte adicional: link*
Table 2†	Judge 1 – I suggest writing it down: "*Da formulação da ideia em diante* *Depois da formulação da ideia em diante.* *Pois o item a seguir fala sobre a fase final do projeto e há a nota explicativa ao final*".	*Da formulação da ideia em diante* *Depois da formulação da ideia em diante.*
Table 3	Judge 1 – *"O que o(s) parceiro(s) ou UCs‡ trarão para o projeto?"* I suggest writing: "*O que o(s) parceiro(s) ou Usuários do Conhecimento trarão para o projeto?"* Since this is the first time the acronym CUs has appeared. In the sentence: "*Ação: Registre os papéis específicos em cartas de apoio aos financiadores, se solicitado*" I suggest changing the word roles to functions. Judge 2 – Action: Record the specific roles in letters of support to the funders, if requested. (I believe that nationally the expression "*carta*" is not used in the sense used in the text – I suggest checking the possibility of replacing it with "*documento*" or "*comunicação*"); Judge 3 – Instead of "*Ação*" I suggest: "Observação".	*O que o(s) parceiro(s) ou UCs trarão para o projeto?* *Nota: Registre as funções específicas em documentos de apoio aos financiadores, se solicitado.* *Padronizado Notas no documento.*
Table 4	Judge 7 – Observation: In synthesis 1+2 – the options that translate "*Apoiador(es) de TC*" as KT Supporter(s) could be improved; perhaps by using synonyms that allow the translation meaning to continue – as in option 2 – "*Suporte de TC*".	*- Apoiador(es) de TC dentro da(s) organização(ões);*
Table 5	Judge 1 – Observation: Although I agree with the equivalences, I think it's necessary to highlight "*público em geral"* in the public item, since in Portuguese we understand that the other options are components of the public and it would be difficult to think outside the box about who else would be the public that is not included in the options. Judge 3 – Instead of "*Qual é seu público-alvo ou UCs?"* I suggest: "*Qual é o seu público-alvo ou UCs?*". Judge 6- Observation: The translation is ok, but I was in doubt about the difference between item five and item one. They both have the same question.	*- Qual é o seu público-alvo ou UCs?* *- Público em geral* *- Item 1 é relacionado aos parceiros do projeto, enquanto item 5 está relacionado aos Usuários do Conhecimento.*
Table 6	Judge 6 – I didn't understand why some words were capitalized.	*Organizada formatação da ferramenta.*

Chart 2 – Cont.

Item	Summary of Comments	Final version
Table 7	Judge 3 – Instead of: *"Quais são os objetivos TC para cada Público/UCs?"* I suggest: *"Quais são os objetivos da TC para cada Público/UCs?"*.	*Quais são os objetivos de TC para cada público/UCs?*
Table 8	Judge 2 – I suggest: "*Texto para não especialistas*" and "*Resumo executivo*". Judge 3 – Instead of "*Educação*" I suggest "*Educacional*" Instead of "*Tecnologia*" I suggest "*Tecnológico*"; instead of "*Nota*" I suggest "*Observação*". Judge 5 – Observation: It's hard to understand what the acronym MPs stands for. Judge 6 – Note: same comment as above about including (in English) links that will not be translated.	- *Educacional* - *Tecnológico* - *Resumo/síntese de evidências* -*MP: Mensagens Principais* - *Mantido links originais.*
Table 10	Judge 1- In this item, it might be interesting to use the words (nouns) distribution and request in place of the verb in the past tense. *"Indicadores de alcance 4 (# distribuído, #solicitado, # downloads/acessos, exposição na mídia)"*; Judge 2 – Suggestions regarding the yellow highlights: "*Conhecimento adquirido*" In Brazil there is no term in Portuguese that translates "*Advocacy*" applied to Health and Social Control – I suggest keeping "*Advocacy*". Judge 3 – Instead of "*Avaliação de TC"* I suggest "*Avaliação da TC*". Judge 5 – Suggestion: "*Quais as perspectivas ou conjunto de habilidades você precisa para ajudá-lo a alcançar seus objetivos de avaliação? (vincule com parceiros, UCs)"*. Judge 6- I think the use of # needs to be reviewed, as it is not used in Brazil. Judge 7 – Note: Some options could be revised, for example: "*satisfeito com utilidade de*" and "*ou tipo de esforços de desenvolvimento de capacidades"*.	- *Substituído # por ;* - *Utilizado Advocacia do paciente* - *Indicadores de alcance (distribuído; solicitado; downloads/acessos, exposição na mídia).* - *Indicadores de utilidade: (lido/ leitura rápida; satisfeito com; utilidade de; conhecimento adquirido; mudança de visão).* - *Avaliação da TC.* - *Quais as perspectivas ou conjunto de habilidades você precisa para ajudá-lo a alcançar seus objetivos de avaliação? (vincule com os parceiros, UCs).*
Table 12	Judge 3 – In place of *"Especialista em avaliação"* I suggest "*Avaliação de especialista*" In place of *"NOTA: Certifique-se incluir todos os custos de TC em seu orçamento para financiadores"* I suggest "*Observação: Certifique-se de incluir todos os custos de TC em seu orçamento para financiadores"*. Judge 6 – I think the term "*Consultor/especialista de conhecimento*" is not understandable. I think it's important to review the meaning of "*knowledge broker*" to identify the best translation.	- *Avaliação de especialista;* - *Nota: Certifique-se de incluir todos os custos de TC em seu orçamento para financiadores.* - *Consultor/especialista em conhecimento.*

*KT: Knowledge Translation †Frames 1,9, 11 and 13 had no comments from the judges, so they were not altered and are not shown in the table ‡UCs: Knowledge Users.

The Content Validity Index (CVI) was estimated for the judges' agreement with the structure and content of the tool. To do this, a descriptive analysis of response frequency was carried out for the "positive" responses (recorded on a Likert scale with scores of 3 and 4) observed in each of the items questioned. According to the results in Table 1, most items showed an overall CVI score of 1.00, with the lowest estimates being 0.86 and 0.95; see Tables 1 and 2, respectively. These estimates were above the minimum acceptable agreement of 0.80, with the average CVI reaching 0.99. Item CVIs were above 0.80, pointing to the tool's satisfactory validity. Results show the tool has good content

validity for the Brazilian context, with no items suggesting mandatory restructuring or a new round of evaluation (see Table 1).

Table 1 – Content validity index and general evaluation of the Knowledge Translation Planning Template. Florianópolis, SC, Brazil, 2023. (n=7)

Items	Judges' evaluation						CVI *			
	Needs major revision†		Needs a little revision		Relevant or representative		General IVC	Semantics/ Idioms	Cultural	Conceptual
	n	%	n	%	N	%				
Title			4	16,7	17	83,3	1,00	1,00	1,00	1,00
Intro					21	100,0	1,00	1,00	1,00	1,00
Table 1			1	5,6	20	94,4	1,00	1,00	1,00	1,00
Table 2	3	16,7			18	83,3	0,86	0,86	0,86	0,86
Table 3			5	27,8	16	72,2	1,00	1,00	1,00	1,00
Table 4			5	22,2	16	77,8	1,00	1,00	1,00	1,00
Table 5			2	11,1	19	88,9	1,00	1,00	1,00	1,00
Table 6					21	100,0	1,00	1,00	1,00	1,00
Table 7			4	22,2	17	77,8	1,00	1,00	1,00	1,00
Table 8			5	27,8	16	72,2	1,00	1,00	1,00	1,00
Table 9			1	5,6	20	94,4	1,00	1,00	1,00	1,00
Table 10			5	22,2	16	77,8	1,00	1,00	1,00	1,00
Table 11					21	100,0	1,00	1,00	1,00	1,00
Table 12	3	16,7	3	5,6	17	77,8	0,95	0,86	0,86	0,86
Table 13					21	100,0	1,00	1,00	1,00	1,00
Average							0,99	0,98	0,98	0,98

*IVC: Content Validity Index †The item "Not relevant or not representative" was not selected by the judges, so it is not included in the table.

Regarding the results for overall agreement and the modified Kappa coefficient of agreement between the judges, the estimates were obtained for two possible answers (items with a significant need for alteration: 1 and 2 versus items with no significant need for alteration: 3 and 4). According to Table 2, for the estimate of overall agreement, all the judges had results above 90.0% (0.900), and the average agreement was 0.965.

Regarding agreement beyond chance, estimated by the modified Kappa coefficient, the minimum average was 0.801 for judges J1 and J6, while for the other judges, the average agreement was 0.824. Considering the modified Kappa coefficient of agreement between all the judges, the average was 0.816, which indicates excellent agreement on the content assessed, thus meeting the acceptance criterion of at least 0.600, as shown in Table 2.

Results for the tool's 13 items, title and instructions show excellent modified Kappa index scores and CVIs for content validity, indicating that the tool is valid in its content, with all items considered adequate, individually and globally. All the changes suggested by the judges were evaluated.

The pre-test stage of the tool was carried out with 30 teachers and students from UFSC's Graduate Nursing Program. It should be noted that some of the participants invited to participate

in the study said they were not familiar with the subject and expressed insecurity about evaluating the tool, which is why they did not agree to participate in the pre-test stage. Regarding education, 28 participants had a degree in nursing, one in psychology and one in naturology. Of these, two (7%) had a bachelor's degree, six (20%) had a specialization, 16 (53%) had a master's degree, and six (20%) had a doctorate, with an average time of experience in the field of 10 years. Among the respondents, 16 (53%) were postgraduate students working in healthcare, and 14 (47%) were health professors.

Table 2 – Overall agreement and modified Kappa coefficient of agreement between judges when evaluating the items in the Knowledge Translation Planning Template tool. Florianópolis, SC, Brazil, 2023. (n=7)

Judges	Overall agreement	Kappa
J1	0,932	0,801
J2	0,982	0,824
J3	0,982	0,824
J4	0,982	0,824
J5	0,982	0,824
J6	0,932	0,801
J7	0,982	0,824
Average	**0,965**	**0,816**

Participants evaluated item comprehensiveness and relevance using a 4-point *Likert* scale. In the pre-test phase, 27 (90%) participants rated the tool sufficiently comprehensive. As for item relevance, 27 (90%) responded that all the items are relevant to the tool's purpose.

DISCUSSION

Currently, discussions about using scientific evidence and the time it takes to implement it in practice are becoming increasingly important[1]. Still, actions aimed at changing this situation are embryonic and are not encouraged by Brazilian research funding bodies. Even so, many KT activities are being carried out by researchers who desire their research results to impact practice.

This study describes the translation process, cross-cultural adaptation, and content validity of the "Knowledge Translation Planning Template" tool. The approach met the methodological rigour recommended in the literature, employing a complex scientific process surpassing words' literal translation[15]. The translation approach considered the intended tool users' culture, context, meaning and audience. Qualified professionals carried out all translation stages according to an accepted methodology[15]. Although there is no consensus in the literature regarding forming a judging committee or the ideal number of participants, it is necessary to consider the tool characteristics and the training, qualifications and availability of the professionals[15,21]. Thus, in this study, we opted for a committee of judges comprised of health researchers with KT knowledge and a translation specialist. This process positively impacted the tool's content validity as it helped standardize terms and make the items clear and easy to understand[21–22].

The final version of the tool emerged from the judges analyzing the previous translations and suggested changes compatible with the Brazilian cultural context. The agreement between the experts about the equivalences analyzed was considered good to excellent, according to the CVI and the modified Kappa coefficient of agreement. This parameter is considered acceptable in the literature[15,22].

The concepts used in this study were defined in the search for semantic, idiomatic, experiential, and conceptual equivalences after evaluation by the committee of judges. Concerning the term *Knowledge Translation* in the tool's title, there is no consensus definition (in health) in the translation to Portuguese or Brazilian literature[23]. It is common for more than one term or word to express the context that the instrument aims to present. When this happens, the objective of the cross-cultural adaptation must go beyond the isolated item; it depends on the context and how it will be applied in practice[15].

During the translation study, we looked for the most appropriate term within the translation and back-translation process, based on the judges' agreement, and checked the literature to see how the topic was being presented in the country and worldwide[24–25]. The word *translation* in Portuguese is associated with the process of a native speaker of a particular language communicating with other languages. This meaning aligns with the English concept of *knowledge translation* as it recognizes that scientific language is not usually accessible to the general population, health system professionals, or others[12].

The term "*knowledge broker/specialist*" is used in countries such as Canada, where KT actions are consolidated. Individuals identified as *knowledge brokers* act as "intermediaries" during knowledge translation, assisting in evaluating and interpreting evidence, facilitating interaction and identifying emerging research issues. They aim to make research more accessible[26]. This profession is not yet well known and widespread in Brazil, but researchers can identify people already working on the subject to help develop their plans when planning KT dissemination. In nursing, the role of a *knowledge broker* involves introducing specific audiences to new knowledge through KT[27].

Concerning the term *advocacy,* authors who work in the health field point out that health advocacy constitutes actions aimed at informing, understanding and seeking ways of exercising rights related to the health of individuals and groups in society, emphasizing the population in situations of vulnerability[28–29]. Following judges' ratings and consensus meetings, *advocacy* was retained.

The "*Modelo de Planejamento de Tradução do Conhecimento*" can help researchers plan KT dissemination for their research. Discussions regarding financial support for these activities are still developing, often presenting as a barrier to research-informed practice.

It's important to note that the authors recognize existing cultural differences and that some terms may be unfamiliar to users of the tool. As this is a guide for planning KT dissemination, various possibilities for use must consider the social and cultural characteristics of the public/people involved in the process. The authors recognize the challenge of advancing KT at a national level due to limited recognition and encouragement from research funding bodies. For this reason, KT activities must consider the researcher's reality, lack of financial resources, and need to identify potential partners. Whenever possible, it is essential to involve knowledge users in dissemination planning. They can contribute to decision-making and inform on what matters to them in practice and research. It should be noted that Brazil's KT landscape reality is different from Canada where funding often includes the costs for dissemination.

CONCLUSION

The "*Modelo de Planejamento de Tradução do Conhecimento*" tool can be accessed online at no cost. The "*Modelo de Planejamento de Tradução do Conhecimento"* results from a careful translation process, cross-cultural adaptation, and content validation demonstrating excellent CVI and modified Kappa values. All steps recommended in the literature were carried out. This resulted in a tool that is applicable and understood by the target audience, consistent with the equivalence of the translation and cross-cultural adaptation for Brazil. Considering the importance of health practices and policies to be informed by the best available evidence, the tool will contribute to advancing the production of research results that respond to 'real world' problems. It is hoped that it will reduce the research-to-knowledge gap.

REFERENCES

1. Geest S, Zúñiga F, Brunkert T, Deschodt M, Zullig LL, Wyss K, et al. Empowering Swiss healthcare for the future: Implementation science to Bridge the "Valley of Death". Texto Contexto Enferm [Internet]. 2021 [cited 2023 Apr 04];30:e2019e004. Available from: https://doi.org/10.1590/1980-265X-TCE-2019-E004

2. Canadian Institutes of Health Research. A guide to knowledge translation at CIHR: Integrated and end-of-grant approaches [Internet]. 2015 [cited 2023 May 12]. Available from: https://cihr-irsc.gc.ca/e/45321.html

3. Barwick M, Dubrowski R, Petricca K. Knowledge translation: The rise of implementation [Internet]. Washington: American Institutes for Research; 2020 [cited 2023 Feb 10]. Available from: https://ktdrr.org/products/kt-implementation/KT-Implementation-508.pdf

4. Hospital for Sick Children. Knowledge Translation Training and Resources. SickKids [Internet]. 2022 [cited 2023 Feb 10]. Available from: https://www.sickkids.ca/en/learning/continuing-professional-development/knowledge-translation-training/#pip

5. Bueno M. Knowledge translation, implementation science and nursing. Rev Enferm Cent O Min [Internet]. 2021 [cited 2023 Mar 10];11:e4616. Available from: http://doi.org/10.19175/recom.v11i0.4616

6. Garcia AKA, Conchon MF, Pierotti I, Fonseca LF. Process of implementing thirst management in surgical burned patients, based on knowledge translation. Texto Contexto Enferm [Internet]. 2023 [cited 2023 Feb 10];32:e20220032. Available from: https://doi.org/10.1590/1980-265X-TCE-2022-0032pt

7. Alves D, Lorenzini E, Oelke N, Onwuegbuzie A, Kolankiewicz A. Study and promotion of safety culture using mixed methods research. Front Nurs [Internet]. 2021 [cited 2022 May 21];8(2):129-39. Available from: https://doi.org/10.2478/FON-2021-0015

8. Lorenzini E, Oelke ND, Marck PB. Safety culture in healthcare: Mixed method study. J Health Organ Manag [Internet]. 2021 [cited 2022 May 21];35(8):1080-97. Available from: https://doi.org/10.1108/JHOM-04-2020-0110

9. Brazil; Ministry of Health. Network for Evidence-Informed Policies. EVIPNet Brazil [Internet]. 2015 [cited 2022 Jun 10]. Available from: https://brasil.evipnet.org/nucleos/ipsum-lorem-dolor-sit-amet-cons-ectetu-igot-almed-10/

10. Rattray M, Marshall AP, Desbrow B, Papen MV, Roberts S. Assessment of an integrated knowledge translation intervention to improve nutrition intakes among patients undergoing elective bowel surgery: A mixed-method process evaluation. BMC Health Serv Res [Internet]. 2021 [cited 2023 Feb 10];21(1):514. Available from: https://doi.org/10.1186/S12913-021-06493-2

11. Strategic Technical Advisory Group of Experts (STAGE), Duke T, AlBuhairan FS, Agarwal K, Arora NK, Arulkumaran S, et al. World Health Organization and knowledge translation in maternal, newborn, child and adolescent health and nutrition. Arch Dis Child [Internet]. 2021 [cited 2022 May 10];107(7):1-6. Available from: https://doi.org/10.1136/ARCHDISCHILD-2021-323102

12. Vieira ACG, Gastaldo D, Harrison D. How to translate scientific knowledge into practice? Concepts, models and application. Rev Bras Enfer [Internet]. 2020 [cited 2022 Dec 15];73(5):e20190179. Available from: https://doi.org/10.1590/0034-7167-2019-0179

13. Barwick M. Knowledge translation planning template [Internet]. Ontario: The Hospital for Sick Children; 2019 [cited 2022 May 10]. Available from: https://www.sickkids.ca/contentassets/4ba 06697e24946439d1d6187ddcb7def/79482-ktplanningtemplate.pdf

14. Lorenzini E, Banner D, Plamondon K, Oelke N. A call for knowledge translation in nursing research. Texto Contexto Enferm [Internet]. 2019 [cited 2023 Apr 04];28:e20190104. Available from: https://doi.org/10.1590/1980-265X-TCE-2019-0001-0004

15. Beaton D, Bombardier C, Guillemin F, Ferraz M. Recommendations for the cross-cultural adaptation of the DASH & QuickDASH Outcome Measures. IWH [Internet]. 2007 [cited 2022 Apr 04];1-45. Available from: https://www.researchgate.net/publication/265000941_Recommendations_for_ the_Cross-Cultural_Adaptation_of_the_DASH_QuickDASH_Outcome_Measures_Contributors_ to_this_Document

16. Fegring R. Methods to validate nursing diagnosis. Heart Lung [Internet]. 1987 [cited 2022 Apr 04];16(6):625-9. Available from: https://pubmed.ncbi.nlm.nih.gov/3679856/

17. Rubio DM, Berg-Weger M, Tebb SS, Lee S, Rauch S. Objectifying content validity: conducting a content validity study in social work research. Soc Work Res [Internet]. 2003 [cited 2022 Jan 04];27(2):94-104. Available from: https://doi.org/10.1093/swr/27.2.94

18. Aguiar ASC, Melo RP, Fontenele FC, Carvalho EC, Moreira RP, Joventino ES. Criteria for selecting experts for validation studies of nursing phenomena. Rev Rene [Internet]. 2011 [cited 2022 Apr 20];12(2):424-31. Available from: https://www.redalyc.org/pdf/3240/324027975020.pdf

19. Rocha GS, Oliveira APP, Nemer CRB, Teixeira E. Validation of care manual for the elderly after brain surgery. Rev Enferm UFPE [Internet]. 2019 [cited 2022 Jan 04];13:e243025. Available from: https://doi.org/10.5205/1981-8963.2019.243025

20. Polit DF, Beck CT, Owen SV. Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. Res Nurs Health [Internet]. 2007 [cited 2022 Jan 04];30(4):459-67. Available from: https://doi.org/10.1002/nur.20199

21. Cunha MRPD, Guirardello EB. Patient safety climate in healthcare organizations: Translation and adaptation for Brazilian culture. Rev Gaúcha Enferm [Internet]. 2018 [cited 2022 Jun 06];39. Available from: https://seer.ufrgs.br/index.php/rgenf/article/view/86449

22. Alexandre N, Coluci MZO. Content validity in the construction and adaptation of measurement instruments. Cien Saude Colet [Internet]. 2011 [cited 2022 Dec 07];16(7):3061-8. Available from: https://doi.org/10.1590/S1413-81232011000800006

23. Martinez-Silveira MS, Silva CH, Laguardia J. Concept and models of "knowledge translation" in the health area. Rev Eletron Comun Inf Inov Saude [Internet]. 2020 [cited 2022 Sep 23];14(1). Available from: https://doi.org/10.29397/reciis.v14i1.1677

24. World Health Organization. Bridging the "know-do" gap meeting on knowledge translation in global health [Internet]. Geneva; Switzerland: WHO; 2005 [cited 2022 Jun 10]. Available from: https://www.measureevaluation.org/resources/training/capacity-building-resources/high-impact-research-training-curricula/bridging-the-know-do-gap.pdf

25. Andrade KRC, Pereira MG. Knowledge translation in the reality of Brazilian public health. Rev Saude Pub [Internet]. 2020 [cited 2022 Nov 07];54:72. Available from: https://doi.org/10.11606/s1518-8787.2020054002073

26. Ward V, House A, Hamer S. Knowledge brokering: the missing link in the evidence to action chain? Evid Policy [Internet]. 2009 [cited 2022 Nov 04];5(3):267-79. Available from: https://doi.org/10.1332/174426409X463811

27. Paiva ED, Zanchetta MS, Londoño C. Innovating in scientific thinking and acting: The Design Thinking method for nursing. Esc Anna Nery [Internet]. 2020 [cited 2022 Nov 10];24(4). Available from: https://doi.org/10.1590/2177-9465-EAN-2019-0304

28. Cohen BE, Marshall SG. Does public health advocacy seek to redress health inequities? A scoping review. Health Soc Care Commun [Internet]. 2017 [cited 2022 May 10];25(2):309-28. Available from: https://doi.org/10.1111/hsc.12320

29. Heck LO, Carrara BS, Ventura CAA. Nursing and health advocacy: development process of an educational manual. Texto Contexto Enferm [Internet]. 2022 [cited 2022 May 10];31:e20210364. Available from: https://doi.org/10.1590/1980-265X-TCE-2021-0364en

NOTES

ORIGIN OF THE ARTICLE
Extracted from the dissertation – Translation, cross-cultural adaptation and use of the *Knowledge Translation Planning Template* tool for the Brazilian context, presented to the Postgraduate Program in Nursing, *Universidade Federal de Santa Catarina*, in 2023.

CONTRIBUTION OF AUTHORITY
Study design: Schmidt CR, Lorenzini E.
Data collection: Schmidt CR, Lorenzini E.
Data analysis and interpretation: Schmidt CR, Lorenzini E.
Discussion of results: Schmidt CR, Lorenzini E, Barwick M.
Writing and/or critical revision of content: Schmidt CR, Lorenzini E, Barwick M.
Review and approval of final version: Schmidt CR, Lorenzini E, Barwick M.

APPROVAL OF ETHICS COMMITTEE IN RESEARCH
Approved by the Research Ethics Committee of the *Universidade Federal de Santa Catarina*, opinion n. 5.533.650/2022, under CAAE: 57620022.4.0000.0121.

CONFLICT OF INTEREST
There is no conflict of interest.

EDITORS
Associated Editors: Glilciane Morceli, Ana Izabel Jatobá de Souza.
Editor-in-chief: Elisiane Lorenzini.

HISTORICAL
Received: May 28, 2023.
Approved: September 01, 2023.

CORRESPONDING AUTHOR
Catiele Raquel Schmidt
catieleenf@gmail.com