

Cross-cultural adaptation of the Survey on Breastfeeding Knowledge (ECoLa)

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ABSTRACT

A timely and updated support from the health care team in the initiation and maintenance of breastfeeding is essential. It has been documented that some health care providers lack the skills to offer adequate guidance to nursing mothers, but there are no local surveys on their knowledge based on standardized instruments. Adapting a validated questionnaire would allow to investigate and compare these data with those of other countries, and support the implementation of necessary educational strategies.

Our objective was to obtain an Argentine version of the Survey on Breastfeeding Knowledge (Encuesta de Conocimientos en Lactancia, ECoLa) through a cross-cultural adaptation process with linguists, breastfeeding experts, physicians, and nurses.

Adequacy, equivalence, and comprehension were verified in the discourses of experts and authors and cognitive interviews. A version of the ECoLa equivalent to the original version was obtained, which was semantically and culturally adapted to Argentine health care providers.

Keywords: *breastfeeding; surveys and questionnaires; medical education; pediatrics; Argentina.*

doi: <http://dx.doi.org/10.5546/aap.2022-02799>.eng

To cite: Herrera Sterren N. Cross-cultural adaptation of the Survey on Breastfeeding Knowledge (ECoLa). *Arch Argent Pediatr* 2023; 121(5):e202202799.

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Funding: None.

Conflict of interest: None.

Received: 8-1-2022

Accepted: 12-1-2022



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INTRODUCTION

Human milk is the ideal food for infants because it contains the amount of biologically specific nutrients they need. In addition, from a holistic health perspective, it contributes to growth and development, provides protection against disease, and reduces the risk of death.¹ The benefits of human milk are numerous in the short and long term, since it promotes the health of both infants and nursing mothers.²

National agencies, the World Health Organization (WHO), and the United Nations Children's Fund (UNICEF)³ recommend the initiation of breastfeeding in the first hour of life and its maintenance for the first 6 months, exclusively and on demand, avoiding the use of infant formulas. Despite these recommendations, the results of the National Breastfeeding Survey (Encuesta Nacional de Lactancia, ENaLac, 2017)⁴ revealed that, in Argentina, 56% of infants are exclusively breastfed at 2 months after birth versus only 42% at 6 months old.

Numerous studies have noted the importance of antenatal information and institutional practices in the initiation and maintenance of breastfeeding; the provision of bottles in the hospital and a delay of more than 2 hours for the first breastfeeding have been pointed out as barriers.⁵⁻⁷ Similarly, the obstacles encountered by the mother-infant dyad are frequent reasons for breastfeeding discontinuation, such as difficulty with latching on, sore nipples, and infant irritability, which results in concerns about milk production and the unnecessary introduction of breast milk substitutes.^{8,9}

These data reflect the importance of an updated support from health care providers and warrant the conduct of further studies on their knowledge of breastfeeding. In this regard, countries such as Spain,^{10,11} Canada,¹² and Turkey¹³ have reported that some health care providers lack the skills to offer adequate guidance to breastfeeding mothers. According to some studies, more and more pediatricians are recommending the discontinuation of breastfeeding due to unnecessary reasons.^{14,15} Although these practices have also been described among other health care providers, differences have been noticed among the different training programs, with a higher level of knowledge on the part of midwives and neonatologists.¹⁶

To date, there are no local surveys based on

standardized instruments on the knowledge of local health care providers about breastfeeding. Validated surveys are scarce and have been developed in other contexts; therefore, to be used in our setting, they require a cross-cultural adaptation process with an internationally recommended method,¹⁷ which achieves equivalence between the original instruments and their adapted versions.

The Survey on Breastfeeding Knowledge (Encuesta sobre Conocimientos en Lactancia, ECoLa) was developed in Spain and is the first questionnaire to meet the steps required by the validation process, with good metric outcomes.¹⁸ It is aimed at pediatricians and pediatric residents and collects information on basic knowledge of breastfeeding and skills for the daily management of breastfeeding problems. It has been adapted recently for nurses through a validation study.¹⁹

The relevance of health care team interventions in establishing and maintaining breastfeeding has been widely documented.^{20,21} Knowing our strengths or shortcomings in relation to training on breastfeeding would support the planning of strategies to provide the staff involved in the perinatal period with tools, with special emphasis on the benefits that breastfeeding brings to the health of the mother-infant dyad at an individual level, and the relevance for public health in general.

The objective of this study was to adapt the ECoLa to obtain a culturally adequate version for Argentine health care providers that is semantically equivalent to the original version from Spain. Based on previous studies, the goal was to adapt and extend the use of the ECoLa to medical and nursing staff.

METHODOLOGY

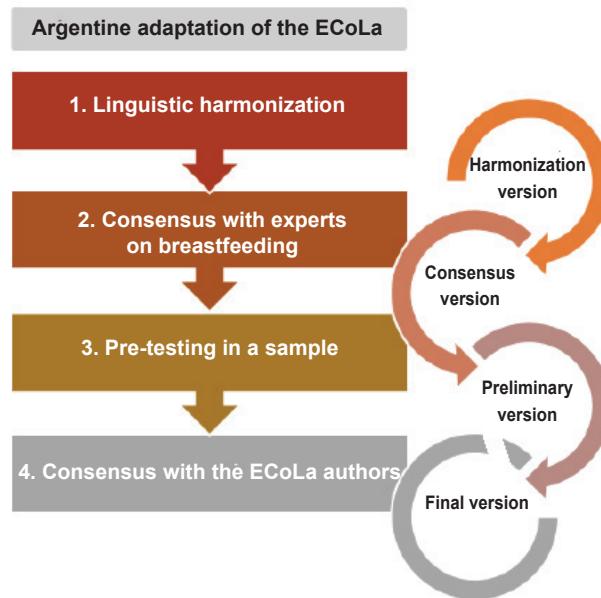
First of all, a formal authorization was obtained from Dr. Menéndez, the author of the ECoLa, to guarantee the authenticity of the final instrument.

Figure 1 shows the cross-cultural adaptation process, conducted in accordance with international recommendations.²²

Linguistic harmonization: assessment of the items that make up the survey and identification of problematic items that could result in comprehension difficulties for the Argentine population.

First consensus with experts: 22 health care providers specialized in breastfeeding, practicing in different mother and child areas across

FIGURE 1. Cross-cultural adaptation process



4 provinces (Córdoba, Buenos Aires, Tierra del Fuego, and Santa Fe) were contacted; 7 of them agreed to participate voluntarily (*Supplementary material 1*). They were asked to rate the adequacy of each item in the target context and to propose any modifications they considered relevant. In this instance, the equivalence of meanings (semantics), the adequacy and relevance of the content of the items in the daily experience of the target population (practical and cultural equivalence) were assessed.^{23,24}

Pre-testing: during the cognitive interviews, a convenience sample of physicians and nurses was assessed for validity based on response, using cognitive tests (verbal probing, term familiarity, paraphrasing method).²⁵ The objective of this stage was to test words and phrases comprehension, to facilitate item wording, and to adapt items to the vocabulary frequently used by surveyed individuals. To consider the viability of the questionnaire, the concerns and queries that arose during the interviews were recorded, paying special attention to those that had led to remarks during the consensus. The notes from these interviews were compiled in a report, which was used to assess the need for further modifications.

Second consensus: together with the authors of the ECoLa, the resulting version was compared to the original version from Spain.

Instruments

ECoLa: it was developed following a

validation process (internal consistency: Kuder-Richardson-20 = 0.87),¹⁸ its objective is to measure the knowledge and skills related to breastfeeding; specific knowledge areas are proposed to this end (*Supplementary material 2*). It is made up of 22 questions: 14 dichotomous questions (true/false), 7 test-type questions (with 4 answer options), and 1 open-ended question. In addition, it includes a series of questions that, without being scored, collect variables that complement the information on the subject matter. The results are scored for an easy interpretation: < 55%: very poor, 55–69%: poor, 70–85%: good, > 85%: excellent.

The main instrument in this study was a spreadsheet with the items of the original ECoLa version; the changes proposed at each step and the notes with the arguments were recorded in the adjacent columns. The spreadsheet was provided as interim instruments to the group of experts and authors, to be used in the different stages of the adaptation. In addition, they were given instructions with definitions of key concepts and explanations of the procedures in each stage.

For the pre-testing, a guide was developed based on the remarks resulting from the first consensus, the items that required testing, and the specific tests for each case.

RESULTS

Linguistic harmonization: 16 statements were identified that may be difficult to understand among

the Argentine population. Of these, 13 were related to cultural and practical equivalence and 3, to semantic equivalence. *Table 1* shows some of the items that were concerning, together with the remarks made and the responses of the Spanish authors.

Regarding the verb tense, 2 linguists were consulted and they agreed that it was necessary to modify the Argentine version style to the simple past tense (e.g., from “I have observed” to “I observed”) so that the grammar form was consistent with local language usage.

First consensus with experts: 10 items were identified as requiring changes, of which 8 were modified. *Table 2* describes examples of these items, with the experts’ observations and the proposals for the preliminary version.

Pre-testing: cognitive interviews were conducted with 5 health care providers (2 nurses, 1 pediatrician, and 2 neonatologists) from public and private facilities, who gave their consent to participate.

During verbal probing, when assessing the familiarity of specific terms, it was decided to change the terms *paritorio* (room of a maternity hospital where childbirth takes place) and *digestólogo* (physician specialized in gastroenterology) to *sala de partos* (delivery room) and *gastroenterólogo* (gastroenterologist).

Among the items that had been previously selected for assessment with the paraphrasing method, problems with the comprehension of the term *maternidad* (maternity ward) were observed. In response to the authors’ explanations, the following were observed to be equivalents in our setting: mother-infant unit or rooming-in, the latter being the most suggested option. *Table 3* describes items that raised concerns and/or difficulties among the surveyed individuals and how they were resolved.

Second consensus: together with the authors, the equivalence between both versions was verified, which resulted in the final Argentine version (*Supplementary Material 3*).

TABLE 1. Items identified and discussed during the harmonization stage

Original item	Remarks
Item 7: In a healthy newborn infant, before the first breastfeeding in the delivery room, the baby should be weighed, their Apgar score should be checked in a radiant warmer, and adequate eye and bleeding prophylaxis should be administered.	The practical and cultural equivalence is argued in relation to the term <i>paritorio</i> (delivery room), as well as the semantic equivalence in relation to <i>profilaxis oculoheorrágica</i> (eye and bleeding prophylaxis) because, although they are understandable, they are not common terms in our setting. In addition, it is suggested to determine if radiant warmers are ‘commonly used in Argentina.
Item 9: At the maternity ward, a newborn infant of more than 15 hours of life who has to be awakened to breastfeed at every feeding is considered an infant at risk.	The practical equivalence and adequate comprehension of the term <i>maternidad</i> (maternity ward) is argued. Authors’ response: hospital ward where mothers are admitted with their newborn infants after giving birth.
Item 21: A nursing mother makes a consultation because she is going to start treatment with adalimumab for Crohn’s disease. Her gastroenterologist has told her that she should wean her 8-month-old baby because the treatment is important. Where would you check whether or not the drug is compatible with breastfeeding? - The drug prescribing information - Medimecum	The cultural equivalence is argued in relation to the terms <i>digestólogo</i> (gastroenterologist) and Medimecum. The semantic and cultural equivalence of the term <i>ficha técnica</i> (prescribing an information) is assessed. Authors’ response: Medimecum is a pocket book widely used in Spain, with practical information on drugs. It is a very abridged version of the pharmacopeia. The prescribing information is a document intended for health care providers, which contains a detailed description of the characteristics of the drug authorization by the Spanish Agency of Medicines and Medical Devices (online consultation).
(From the initial questions asked to characterize the surveyed population): Professional category: Attending physician, Resident (R1, R2, R3, R4), Other.	The practical equivalence is argued in relation to the position of <i>Adjunto</i> (Attending physician) as such in our setting. Authors’ response: <i>Adjunto</i> is the term used to refer to staff physicians at the hospital. They are hired specialist physicians who have completed their training.

Table 2. Items with remarks during the first consensus stage with experts on breastfeeding

Original item	Remarks	Proposed item
Item 8: In extremely preterm infants, breast milk is of choice...	To achieve semantic equivalence, it is recommended that the term <i>grandes prematuros</i> (extremely preterm infants) be changed to a colloquial definition used in our setting.	In extremely preterm births (< 32 weeks)
Item 18: List 5 characteristics of an effective latching that may be used to assess a feeding.	The semantic and cultural equivalence of the term <i>enganche</i> (latching) is argued; it is suggested to replace it with a term more commonly used in our health care setting.	The Argentine Spanish alternatives proposed for latching include <i>agarre</i> , <i>acople</i> , <i>prendida</i> .
Item 20: Regarding the provision of free samples of milk to mothers at health centers:...	Emphasize the difference between (human) milk and baby formula. The semantic and cultural equivalence is assessed.	Regarding the provision of free samples of formula milk to mothers at health centers.
Item 24: Rate from 1 (worst) to 5 (best) the quality of the training received on breastfeeding during the residency program: Poor 1 2 3 4 5 Satisfactory.	In order to unify the 2 scales proposed in the item, it is suggested to replace the term <i>peor</i> (worse) with <i>deficiente</i> (poor), as well as <i>mejor</i> (best) with <i>satisfactoria</i> (satisfactory). In Argentina, professional nurses have bachelor's or specialist degrees, whereas residency programs are exclusive to medical residents, so a term that encompasses both health care providers is proposed in order to achieve practical and cultural equivalence.	Rate on a scale from 1 to 5 (1: poor, 5: satisfactory) the quality of the training: received on breastfeeding during you training: Poor 1 2 3 4 5 Satisfactory
(Check list of items in the observation of feeding): The baby is seen and heard swallowing.	It is suggested to replace the term <i>se oye</i> with <i>se escucha</i> to achieve semantic and cultural equivalence (in Argentine Spanish, <i>escuchar</i> is more common than <i>oír</i> although both convey the same meaning).	The baby is seen and listen swallowing.

DISCUSSION

Different surveys have been designed to determine training on breastfeeding among health care providers.^{11,13,14} Some authors justify the development of their own questionnaire because they did not find standardized instruments in the bibliography.¹² In this context, the ECoLa¹⁸ was developed after a test of expert judges with 14 experts, with good metric outcomes. Due to the early and continuous contact of nurses with the mother-infant dyad and the importance of their support, a linguistic adaptation was recently carried out through a validation study,¹⁹ targeted at these health care providers.

Given the considerable investment in terms of labor and time involved in the design of standardized questionnaires, the chosen alternative is the translation of available instruments with acceptable metrics, which also allows for the comparison of populations worldwide. Consequently, and based on previous studies, this study proposed to develop the Argentine version of the ECoLa adapted to medical and nursing staff using an internationally recommended method.²²

Language characteristics, in addition to the differences in the educational and health systems of each region, are a challenge when it comes to achieving the intended equivalence between

TABLE 3. Items modified as a result of the cognitive interviews conducted in the pre-testing stage

Original item	Remarks	Proposed item
Item 7: In a healthy newborn infant, before the first breastfeeding in the delivery room, the baby should be weighed, their Apgar score should be checked in a radiant warmer, and adequate eye and bleeding prophylaxis should be administered.	The term <i>cuna con calor radiante</i> (crib with radiant heat) is not common, whereas the equivalent in our setting is <i>servocuna</i> (radiant warmer); usually, postnatal controls are performed in a heated space called <i>recepción</i> , on a table with a direct heat source. The phrase eye and bleeding prophylaxis also presents a variable interpretation, because local protocols describe it separately, but the Spanish version uses a single term.	In a healthy newborn infant, before the first breastfeeding in the delivery room, the baby should be weighed, their Apgar score should be recorded, and adequate eye prophylaxis and vitamin K (IM) should be administered.
Item 18: List 5 characteristics of an effective latching that may be used to assess a feeding.	The term <i>enganche</i> (latching) is not used commonly. In local hospital jargon, the Spanish terms <i>prendida</i> and <i>acople</i> are more common (the former was selected for testing due to its familiarity).	List 5 characteristics of an effective latching that may be used to assess a feeding.
Item 16: (Recommendations regarding cracked nipples): Use of pure lanolin after each feeding.	It is not a common prescription among Argentine health care providers and it is not usually marketed. Instead, the recommendation is to apply a cream with calendula. This item's comprehension is hurdled because of the unknown product.	Use of calendula cream after each feeding.

the original instruments and their versions; therefore, a simple translation would result in biased instruments due to linguistic, cultural, or psychometric reasons.²⁴

Throughout the study, the suitability of the cross-cultural adaptation method¹⁷ was verified to achieve an Argentine version equivalent to the original survey. The process involved the participation of linguists, breastfeeding experts, and medical and nursing professionals as target subjects of the survey. Each stage carried out allowed for a careful observation of the survey to assess which terms may be considered ambiguous and to review the adequacy of the language in terms of grammatical forms and cultural differences. It was necessary to have the authors review each partial instrument to neutralize differences between both populations and settings.

During the harmonization processes, it was suggested that the consensus version be administered to a small group of representatives of the target population to assess the interpretability of the instrument.²⁶ As qualitative methods are preferable, this study included cognitive interviews with physicians and nurses, who provided valuable information based on their

daily experience within the local health system.

Some remarks should be made regarding the methodology used in this study. First of all, the fact that experts and health care providers were selected according to their availability and that there was a low response rate during the consensus may be considered a limitation; however, heterogeneous participation in terms of training and place of residence could be considered a strength. In addition, the assessment of the psychometric properties of an instrument is an essential criterion for determining the quality of its measurement,²⁷ so it is necessary to assess the reliability and validity of this survey in future studies to guarantee the accuracy of the adapted version.

The version resulting from this study is the first authorized and available adaptation for Argentine health care providers, which will make it possible to investigate their knowledge and skills on breastfeeding. This would be critical to identify strengths, shortcomings, and potential areas for improvement to develop adequate training strategies and to determine their effectiveness.

It may be concluded that the cross-cultural adaptation process helped to resolve semantic,

cultural, and practical difficulties that would not have been detected with a simple translation. The result is a version of the ECoLa that is semantically and culturally adapted to Argentine health care providers and equivalent to the original version from Spain. ■

Acknowledgments

I would like to thank Miguel Menéndez Orega, M.D., for his great willingness and collaboration in the adaptation of the survey developed by him. I would like to thank Macarena Blázquez, B.S., for taking part in the process of this study and sharing her knowledge with such generosity. I also thank PRIMAL (Asociación Cordobesa de Puericultura) for creating an updated and respectful training space. And I thank the health care providers who generously participated in the harmonization, consensus, and interviews.

Supplementary material available at: https://www.sap.org.ar/docs/publicaciones/archivosarg/2023/2799_AE_HerreraSterren_Anexo.pdf

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