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Italian Translation and Cultural Adaptation of the Prenatal Breastfeeding Self-Efficacy Scale

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Abstract

Background: Maternal self-efficacy is one of the main predictors of breastfeeding continuation during the first six months. The Prenatal Breastfeeding Self-Efficacy Scale (PBSES) is a validated tool to measure pregnant women's breastfeeding confidence, yet it lacked an Italian version at the time of assessment. This study aimed to translate and culturally adapt the PBSES into Italian, providing the basis for future psychometric validation and its potential use in identifying women at risk of early discontinuation of exclusive breastfeeding.

Methods: The PBSES instrument followed the World Health Organization (WHO) translation guidelines, which included forward translation, expert panel review, back translation and pre-testing with cognitive interviews. Sixty pregnant women joined the study through online recruitment to evaluate both understanding and cultural appropriateness.

Results: 10 out 20 items of the PBSES needed minor modifications for cultural adaptation, which included simplification of terms and the clarification of ambiguous concepts. The final Italian version demonstrated high comprehension and conceptual equivalence with the original scale.

Conclusions: The final version of the PBSES developed in this study provides a foundational instrument that, following psychometric validation in the Italian population, could serve as an evidence-based tool for healthcare professionals to identify women at high risk of premature breastfeeding cessation during antenatal care.

Keywords: *Maternal self-efficacy; Breastfeeding; Prenatal care.*

Introduction

Breastfeeding is well-known as the best practice for feeding a newborn. As strongly recommended by the World Health Organization (WHO)[1] and United Nations International Children's Emergency Fund (UNICEF)[2], infants should be exclusively breastfed for the first six months following birth; beyond that period, breastfeeding can continue if the mother and child desire, in combination with age-appropriate complementary foods.

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Breast milk provides all the essential nutrients necessary to ensure healthy growth for infants. It offers short-term benefits, such as protection against child infections and malocclusion, and long-term benefits, including increased intelligence, as well as likely reductions in overweight and diabetes[3]. Breastfeeding offers important health benefits for mothers, such as lowering the likelihood of developing breast and ovarian cancers and reducing the risk of type 2 diabetes. Moreover, shorter durations of breastfeeding have been linked to an increased risk of postpartum depression[4].

Globally, exclusive breastfeeding within the first six months of life is currently maintained by 48% of infants[2]; consequently, the majority of the paediatric cohort is deprived of full protective factors during early development. Epidemiological data from the 2023 report confirms a shortfall in meeting the WHO 2025 target[2], which aimed for a minimum threshold of 50% in alignment with the six maternal and infant nutrition goals outlined by the World Health Assembly in 2012[5]. In Italy, while the national average during the first three months is 46.7%, the epidemiological picture is highly fragmented by geographical disparities[6]. By the fourth and fifth months of life, there is a pronounced reduction in adherence, with interregional rates ranging from 13.5% in Sicily to 43.2% in Friuli Venezia Giulia, compared to a rate of 32% reported in Lombardy[6].

Increasing the rate of exclusive breastfeeding is a mission. To achieve this goal, numerous studies over the past decades have investigated which factors are related to the decision of a mother to early breastfeeding drop out. One recurring factor has been shown to influence the duration of breastfeeding: self-efficacy[7].

Self-efficacy, as defined in Bandura's cognitive theory, refers to an individual's confidence in their ability to manage their actions and influence life circumstances[8]. Bandura's theory was first applied to breastfeeding mothers by Dennis and Faux[9], who developed the Breastfeeding Self-Efficacy Scale, an instrument used during the postpartum period to assess a mother's confidence in her ability to successfully breastfeed. Since its first use in 1999, during the last decades, the instrument has become widely used in many contexts, from San Juan to Adelaide[10,11].

Two systematic reviews conducted in 2023 and 2024 demonstrated that self-efficacy-based instruments are valuable for clinical and research purposes[12,13]. The breastfeeding self-efficacy of a woman can identify women at elevated risk of discontinuation of the practice, who are most likely to interrupt breastfeeding before six months.

Many versions of the instrument have been developed over the years, in particular a specific form designed for pregnant women: the Prenatal Breastfeeding Self-Efficacy Scale (PBSES). In 2006, Wells et al[14] developed this tool based on the concept of self-efficacy. The PBSES consists of 20 items, each scored on a Likert scale ranging from 1 (not at all confident) to 5 (completely confident). The items are grouped into four thematic factors, except for two remaining independents. The thematic areas are:

- Confidence in the ability to respond to the request to breastfeed
- Confidence in gathering information on how to breastfeed
- Confidence in the ability to breastfeed with other people around and a sense of embarrassment
- Confidence in dealing with social pressure related to breastfeeding

The total score ranges from a minimum of 20 to a maximum of 100, with higher scores indicating greater perceived self-efficacy. In particular, the prenatal version refers to pregnant women, because evidence suggests that mothers decide how they will breastfeed their babies before giving birth[15]. Wells et al[14] also highlighted that understanding a woman's level of self-efficacy, regarding future breastfeeding during pregnancy, can give health professionals more time to support mothers who may be vulnerable or insecure about exclusive breastfeeding.

The instrument has been translated and validated in various contexts. A Turkish version[16] confirmed the validity and reliability of the PBSES, and other translated versions have also been assessed with a Taiwanese and Spanish sample[17,18], demonstrating a good predictive role.

Given the advantages of administering this scale during pregnancy, its simplicity, and ease of application, the PBSES has been identified as a suitable instrument for recognizing women at risk of early interrupting exclusive breastfeeding. Considering that an Italian version is not yet available, we aimed at translating the original PBSES[14] into the Italian language and to culturally adapt the instrument.

Materials and Methods

The English version of the scale was translated into Italian and culturally adapted to create different linguistic versions of the original PBSES. To achieve this goal, the steps recommended by the WHO were followed[19]. This well-established method includes forward translation, a discussion with a panel of experts, back-translation, pre-testing, and cognitive interviews to obtain a definitive version of the instrument. The translation process, developed by the WHO, ensures the scale's intercultural and conceptual equivalence.

Ethical approval for the study was obtained from the Ethics Review Committee of the University of Milano-Bicocca (Prot. n. 0008867/2023, UOR 003297; Milan, Italy). All participants provided informed consent prior to participation. Formal permission to translate and culturally adapt the PBSES into Italian was obtained from the copyright holder.

Forward translation

A midwifery student, who was proficient in the English language and culture but was a native speaker of Italian, produced an initial version of the scale. The translation focused on the intercultural adaptation of words and phrases rather than a literal translation, using the most common and simple language possible. As a result of this process, the first version of the scale was obtained.

Expert panel

Three bilingual midwives with experience in clinical practice and research formed the expert panel. The goal at this stage was to identify and resolve any inadequate expressions or concepts from the initial Italian translation performed by the student. The expert panel discussed certain words or expressions and suggested alternative options. At the end of this phase, a second version of the scale was developed.

Back translation

An independent translator, fluent in Italian but whose native language was English, with no prior knowledge of the instrument or familiarity with midwifery, retranslated "version 2" of the scale back into English. The focus of the back translation was the same as that of the initial translation into Italian: conceptual and cultural equivalence was prioritized over literal accuracy. By comparing the original scale with "version 2" in English, the independent native English-speaking translator confirmed the conceptual equivalence.

Pre-test and cognitive interviews

The instrument was administered to the target population. WHO's cultural adaptation method recommends involving 10 participants per section of the instrument. Since the PBSES is divided into four factors grouping 18 items, plus two independent items, the scale was administered to a total of 60 women.

The inclusion criteria for participants were being pregnant, being over 18 years old, and having proficiency in Italian. Participants were recruited through convenience sampling via social networks. An invitation letter, containing an access link, was published on the researchers' social media accounts (Instagram, Facebook). The letter provided a brief description of the study and the women who decided to participate submitted their email address through the access link.

Participants were provided with email contacts through which they could request clarifications about the study, obtain information regarding data publication, and, if necessary, withdraw their participation.

The questionnaire was distributed to the mailing list compiled during recruitment. It was administered online via Google Forms, ensuring complete anonymity, and could be accessed only after participants provided informed consent. Although consent to participate was obtained from 88 women, only 60 actively completed the questionnaire. Recruitment took place from February 1 to March 15, 2023. Participants' ages ranged from 25 to 48 years. In terms of marital status, 61.7% (n = 36) were married, and the remaining 40.0% (n = 24) were either cohabiting or single. Regarding gestational age, the sample included 3.3% (n = 2) participants in the first trimester (0–13+6 weeks), 30% (n = 18) in the second trimester (14–27+6 weeks), and 66.7% (n = 40) in the third trimester (28+ weeks). In terms of parity, for 83.3% (n = 50) responders were their first pregnancy, while 16.7% (n = 10) participants reported having previous pregnancies. The educational level of the sample was medium to high: 75% (n = 45) women held a university degree, of whom 55.5% (n = 25) had a master's degree. Additionally, 23.3% (n = 14) women had a high school diploma, and 1.7% (n = 1) participant had completed lower secondary education. Many women 85% (n = 51) had already decided on the newborn's feeding method after birth. Among these, 50.9% (n = 26) participants intended to exclusively breastfeed postpartum.

Participants were then asked to rephrase each of the 20 items in their own words to test the equivalence of the expressed concept. They were also asked to highlight any words or expressions that were difficult to understand and, if applicable, suggest alternative wording that could make the statement clearer.

Final version

Based on the data collected during the pre-test phase, the final version of the instrument was established. Rather than employing a rigid statistical threshold, item modifications were driven by a qualitative consensus approach within the expert committee. Revisions were triggered whenever participants' feedback highlighted a clear conceptual misalignment, semantic ambiguity, or cultural bias that could compromise the item's face validity. Consequently, every instance of participant hesitation or negative feedback was systematically re-evaluated by the panel to determine whether a phrasing amendment was required.

Results

Initial Translation and Expert Panel Review (Phases 1 and 2)

In the first phase, the forward translation yielded an Italian version of the Prenatal Breastfeeding Self-Efficacy Scale (PBSES) characterized by clear, accessible language, ensuring comprehensibility for individuals outside the midwifery field. A conceptual rather than a literal approach was prioritized to preserve the original meaning. During the second phase, the expert panel resolved ambiguities regarding inadequate terminology, generating Version 2 of the PBSES (**Supplementary Table 1**). The subsequent back-translation phase revealed no substantial discrepancies between the original and back-translated versions, confirming conceptual equivalence across all items.

Pre-Testing and Cultural Adaptation (Phase 3)

Pre-testing of the 20-item instrument confirmed that 10 items were retained unchanged from Version 2, whereas the remaining 10 items required minor cultural adaptations based on participant feedback. Three representative examples of the adaptation process are presented below, while all modifications are reported in **Supplementary Table 2**. These refinements improved clarity, readability, and cultural appropriateness without altering the conceptual meaning of the original items. Factor 4 required no further cultural adaptations during the pre-testing phase, as participants reported no comprehension difficulties or culturally inappropriate wording.

Factor 1: Item 4 Adaptation

For Item 4 of Factor 1 ("I can breast-feed my baby when I'm upset"), the overarching conceptual meaning was validated by 81.7% (n = 49) of participants. The literal Italian translation of "upset" was utilized in 40% (n = 24) of responses. Conversely, 60.0% (n = 36) of participants employed alternative expressions denoting an altered emotional state, including "worried" (11.7%, n = 7), "agitated" (8.3%, n = 5), and "not calm" (6.7%, n = 4). Additionally, 5% of responses (n = 3) associated "upset" with physical or psychophysical distress, using terms such as "not feeling well", "mental and physical fatigue", or "altered psychophysical state". To reflect this semantic breadth, Item 4 was modified by appending the Italian equivalent of "worried" after "upset," linked by the conjunction "or."

Factor 2: Item 1 Adaptation

Item 1 of Factor 2 ("I can find out what I need to know about breast-feeding my baby") achieved a general conceptual agreement of 73.3% (n = 44). In rewording the item, 66.7% (n = 40) of

respondents introduced the term "information" to convey the core meaning of "what I need to know." However, the exact phrase "I need to know" was omitted by 60% (n = 36) of the sample, while 16.7% (n = 10) replaced it with adjectives such as "necessary", "useful" (6.7%, n = 4), or "essential" (1.7%, n = 1). Furthermore, 6.7% (n = 4) introduced the adverb "easily," which was absent in the original English formulation. Consequently, the item was culturally adapted by replacing "what I need to know" with "necessary" and "what" with "information."

Factor 3: Item 2 Adaptation

Cultural adaptation was also applied to Item 2 of Factor 3 ("I can breast-feed my baby around people I do not know"). The English preposition "around" was rephrased as "in the presence of" in 35% (n = 21) of cases. Regarding the phrase "people I don't know," 46.7% (n = 28) of participants chose more specific definitions, substituting it with "strangers" (25%, n = 15) or "unknown people" (21.7%, n = 13). The item wording was adjusted accordingly to enhance clarity in the target population.

At the end of the pre-testing phase, a final Italian version of the scale was obtained (**Supplementary Table 2**).

Discussion

The present study successfully translated and culturally adapted the Prenatal Breastfeeding Self-Efficacy Scale (PBSES) into Italian. A rigorous methodology was guaranteed, following the steps recommended by WHO[19]. The forward translation ensured that the Italian version of PBSES could be understood even by individuals without specific knowledge of midwifery, with a focus on clarity and accessibility instead of a literal translation. The expert panel led to minor adjustments in terminology to enhance cultural relevance and ease of comprehension. The back translation confirmed that the adapted items have the same meaning as the original scale. The pre-testing phase was conducted on a target population: participants clearly understood the general meaning of the scale, reporting a comprehension for each item ranging from 71.7% to 90%. Participants proposed alternative wording for 50% of the items; however, these refinements did not alter the conceptual meaning of the original statements. The final Italian version was, therefore, developed with the aim of achieving both linguistic equivalence and cultural appropriateness. Studies that have translated and cultural adapted self-efficacy scales in different languages report challenges like those encountered in our adaptation of the PBSES. The Spanish adaptation of the PBSES[18] faced linguistic modifications due to idiomatic expressions and cultural interpretations of breastfeeding-related terms. Similar results occurred in the Portuguese translation and cultural adaptation of Breastfeeding Self-Efficacy Scale, with minor modification of items[20].

Our study confirmed this trend, as participants proposed simplifications and modifications for certain terms *(e.g., "people I do not know "→" strangers"),* well knowing the overall meaning of the items, but using popular and familiar terms for the Italian language.

The final version of the PBSES, developed in this study, provides a foundational instrument for psychometric validation within the Italian population. Only after undergoing this validation process will this scale become a deployable, evidence-based resource for healthcare professionals during antenatal care and breastfeeding training, enabling the early identification of women at

high risk for premature breastfeeding cessation. Indeed, while the Breastfeeding Self-Efficacy Scale-Short Form[21] represents the only self-efficacy tool previously adapted into Italian, its applicability is strictly limited to the postpartum period; consequently, specific instruments to assess maternal self-efficacy antenatally remain lacking.

As a result of a recent systematic review and meta-analysis, prenatal interventions focused on breastfeeding may assist mothers with low self-efficacy to increase their confidence and ability to breastfeed[22]. The translated PBSES can be implemented into prenatal care programs, particularly during prenatal visits with midwives or lactation consultants. Healthcare providers can use the scale to assess a woman's confidence in breastfeeding before childbirth, enabling early identification of those who may need additional support. Pregnant women with low self-efficacy scores can receive targeted interventions, such as one-on-one counselling or peer support programs, that have been demonstrated as helpful strategies[23]. In the scale many topics are treated (e.g., breastfeeding in public, managing social pressure, or seeking information about breastfeeding), so it could be easy to target specifical interventions based on the score reached by women. Follow-up assessments using postnatal self-efficacy scales, such as the Breastfeeding Self-Efficacy Scale[21], can be conducted postpartum to monitor progress and reinforce positive breastfeeding experiences.

Limitations

This study should be interpreted considering some limitations. While the tool was successfully adapted according to WHO guidelines, its clinical implementation is pending formal psychometric validation–including internal consistency, test-retest reliability, and construct, convergent, and predictive validity at 3 and 6 months. Furthermore, regarding generalizability, the small sample size and social network-based recruitment may have introduced selection bias, restricting representativeness. Additionally, the sample's 94% prenatal intention to exclusively breastfeed drastically exceeds the actual Italian exclusive breastfeeding rate at 3 months (46.7%), suggesting an overrepresentation of highly motivated mothers[24]. While this potential bias limits generalizability to women facing lower motivation or greater breastfeeding difficulties, such a mismatch between prenatal intent and postpartum reality is a widely recognized phenomenon, typically driven by systemic and clinical barriers encountered after childbirth that heavily impact longitudinal outcomes. A low level of self-efficacy is widely associated with breastfeeding discontinuation[25], contributing to a suboptimal percentage of exclusive breastfeeding during the first 6 months[2]. However, because breastfeeding outcomes are inherently determined by the interplay of multiple confounding factors, investigating prenatal self-efficacy at this stage would represent only a beginning. Nevertheless, establishing an instrument upon which clinical practice can be objectively grounded would provide a substantial starting point. Future research will focus on a rigorous validation study deploying a multi-centre recruitment strategy to enhance sample representativeness. This subsequent phase is designed to comprehensively evaluate the tool's psychometric properties, including internal consistency, test-retest reliability, and construct validity. Furthermore, a longitudinal follow-up will be integrated to evaluate the scale's predictive validity against exclusive breastfeeding outcomes at 3 and 6 months postpartum.

Conclusions

The aim of the study was achieved through the translation and cultural adaptation of the scale. The final version of the PBSES developed in this study addresses a key determinant of breastfe-

eding duration and, following formal psychometric validation, could serve as an evidence-based tool for healthcare professionals to identify women at high risk of premature breastfeeding cessation during antenatal care.

Declarations

Artificial Intelligence (AI) – Assisted Technology Statement

No AI-assisted technologies were used in the preparation of this manuscript.

Authors' Contributions

All authors meet the 4 authorship criteria as defined by the International Committee of Medical Journal Editors (ICMJE). Each author has contributed substantially to the conception and design of the study, the analysis and interpretation of data, and the drafting and critical revision of the manuscript, as follows: VFZ, EV - Research concept and design, Collection and/or assembly of data, Data analysis and interpretation, Writing the article, Critical revision of the article, Final approval of the article; AN - Research concept and design, Data analysis and interpretation, Writing the article, Critical revision of the article, Final approval of the article; MS, SF - Research concept and design, Data analysis and interpretation, Critical revision of the article, Final approval of the article. All authors have approved the final version of this manuscript.

Conflict of Interest

The authors have no conflict of interest to declare.

Data Availability Statement

The data used and analysed during the current study are available upon reasonable request from the corresponding author.

Ethics Approval

Approval by the Ethics Committee was obtained from the Ethics Review Committee of the University of Milano-Bicocca - Italy (Prot. n. 0008867/2023, UOR 003297).

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Informed consent

All participants provided informed consent prior to participation.

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