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ONLINE COURSES ON BREASTFEEDING AS A STRATEGY TO IMPROVE THE QUALITY OF CARE: A SCOPING REVIEW

Cursos online sobre aleitamento materno como estratégia para melhoria da qualidade assistencial: revisão de escopo

Cursos en línea sobre lactancia materna como estrategia para mejorar la calidad de la atención: una revisión de alcance

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ABSTRACT

Objective: to analyze the scientific production on online courses on breastfeeding as a strategy to improve the quality of care. **Methods:** a scoping review, based on the method proposed by the Joanna Briggs Institute. The electronic databases used were: PubMed; LILACS; CINAHL; SCOPUS; Web of Science; BDENF and EMBASE, published from 2015 to 2020. **Results:** 961 abstracts were read, 15 articles in full for the final inclusion of 9 articles. The publications occurred between 2011 and 2020, their samples ranged from 54 to 26009 participants. In only 5 studies (55.6%) some method of learning assessment was used and the most used strategy was the application of pre and post test. **Conclusion:** the scarcity of studies on online courses on breastfeeding as a strategy to improve the quality of care shows a gap in knowledge on the subject. It was also found the need to improve the methodological description of the published studies.

DESCRIPTORS: Breast Feeding; Lactation; Education distance; Health Personnel; Educational Technology.

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RESUMO

Objetivo: analisar a produção científica sobre cursos online sobre aleitamento materno como estratégia para melhoria da qualidade assistencial. **Métodos:** Revisão de escopo, baseada no método proposto pelo Joanna Briggs Institute. As bases eletrônicas de dados utilizadas foram: PubMed; LILACS; CINAHL; SCOPUS; Web of Science; BDNF e EMBASE, publicados de 2015 a 2020. **Resultados:** De um total de 961 resumos, 15 artigos foram selecionados e lidos na íntegra, com inclusão de 9. As publicações ocorreram entre 2011 e 2020, com amostras entre 54 a 26.009 participantes. Em apenas 5 estudos (55,6%) utilizou-se algum método de avaliação da aprendizagem e a estratégia mais usada foi a aplicação de pré e pós teste. **Conclusão:** A escassez de estudos a respeito de cursos online sobre aleitamento materno para melhoria da qualidade assistencial evidencia uma lacuna de conhecimento sobre o tema. Também se constatou a necessidade de melhorar a descrição metodológica dos estudos publicados.

DESCRIPTORIOS: Aleitamento materno; Lactação; Ensino a distância; Pessoal de saúde; Tecnologia Educacional.

RESUMEN

Objetivo: analizar la producción científica sobre cursos online en aleatoriedad materna como estrategia para mejorar la calidad asistencial. **Métodos:** Revisión de escopo, basada en el método propuesto por el Instituto Joanna Briggs. Las bases de datos electrónicas utilizadas fueron: PubMed; LILACS; CINAHL; SCOPUS; Web of Science; BDNF y EMBASE, publicadas desde 2015 hasta 2020. **Resultados:** Se leyeron 961 resúmenes, 15 artículos completos para la inclusión final de 9 artículos. Las publicaciones se produjeron entre 2011 y 2020, sus muestras oscilaron entre 54 y 26009 participantes. Sólo en 5 estudios (55,6%) se utilizó algún método de evaluación del aprendizaje y la estrategia más utilizada fue la aplicación de pre y postest. **Conclusión:** La escasez de estudios a propósito de los cursos online sobre el aleitamento materno como estrategia para la mejora de la calidad asistencial evidencia una laguna de conocimiento sobre el tema. También se constató la necesidad de mejorar la descripción metodológica de los estudios publicados.

DESCRIPTORIOS: Lactancia Materna; Lactancia; Educación a Distancia; Personal de Salud; Tecnología Educacional.

INTRODUCTION

According to the World Health Organization (WHO), exclusive breastfeeding (EBF) is recommended from the first hour of life until six months of age. This measure reduces mortality and promotes child growth and development, protecting against infections and other health problems. In addition, it has long-term benefits: there is evidence that breast milk can promote intelligence in children who have been breastfed. Breastfeeding (BF) also has advantages for the nursing mother: she is less likely to develop type 2 diabetes, breast cancer, and ovarian cancer. Thus, it is essential that health professionals have knowledge on the subject to advise the population and prevent early weaning.¹⁻²

In Brazil, the prevalence of EBF in children under six months of age has increased significantly in recent decades: from 2.9% in 1986 to 45.7% in 2020. However, the national prevalence of EBF has not yet reached the target recommended by the WHO: above 50%. Therefore, the increase in these rates corresponds to a national public health challenge³. The literature shows that health education guidelines and interventions both prenatally and postpartum are effective in encouraging the initiation and duration of EBF. Therefore, training health professionals is an important measure to improve breastfeeding rates in Brazil⁴.

Studies have shown that technology can be an ally in nursing education, because it can make this process more dynamic, generating proactivity in the student, who is encouraged to take an active role in building knowledge. This contributes directly to the development of critical-reflective thinking and autonomy⁵.

It is also important to point out that Information and Communication Technologies (ICT) are an economical, practical, and fast way to share information⁶.

Besides the advantages mentioned above, technological innovation in teaching became a necessity with the advent of the pandemic caused by the SARS-CoV-2 coronavirus, since the high rate of transmissibility required social isolation to suppress the progress of the disease. In this context, remote teaching has become an important strategy to enable educational activities⁷⁻⁸.

Among the tools used to promote distance learning is the Virtual Learning Environment (VLE), which is a computer system capable of integrating features and tools that favor an interactive teaching-learning process, online, accessed by web browsers or local networks⁹.

In the online teaching modality, virtual courses simulate the classroom environment, in which students and teachers/tutors can interact through the resources of the platform itself, or even have material to answer frequent questions from participants, even without interaction with tutors. Therefore, this tool allows more flexibility in the teaching-learning process, allowing students to get in touch with the content at their own pace¹⁰.

Considering the relevance of empowering health professionals to promote breastfeeding and the advantages of using technology in teaching, it is important to develop a literature review to identify publications on online courses in breastfeeding and their application in health care. Thus, this study aimed to analyze the scientific production on the use of online courses on breastfeeding as a strategy to improve the quality of care.

METHODS

This is a scoping review, according to the methodological approach proposed by the Joanna Briggs Institute (JBI)¹¹, which aims to synthesize and analyze concepts present in the literature in order to clarify them; discover essential factors and characteristics concerning a concept; map the types of evidence published on a specific topic or field of research; explore the study methods being used on a given topic, as well as discover and analyze knowledge gaps¹¹⁻¹². The recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR)¹³ guidelines were followed. The review had the following guiding question: "What are the publications on online breastfeeding courses for health professionals, developed as a strategy to improve care?" The question was formulated considering the acronym PCC (Population, Concept, Context)¹¹, being P (Population) represented by health professionals; C (Concept), breastfeeding; and, finally, C (Context), the online course.

As electronic databases, the following were used: PubMed (United States National Library of Medicine); LILACS (Latin American and Caribbean Literature in the Health Sciences); CINAHL (Cumulative Index to Nursing and Allied Health Literature); SCOPUS; Web of Science; BDNF (Brazilian Nursing Database) and EMBASE (Excerpta Medica Database).

The JBI suggests three steps for developing a search strategy. The first step is to conduct an initial search limited to just two appropriate databases relevant to the topic. For example: EMBASE and PubMed. After performing this initial search, you must analyze the descriptors of the identified articles, as well as the words contained in their title and abstract. After selecting the descriptors and keywords, a second search using them in all the databases included in the review method is recommended. Subsequently, the report reference list and the identified articles should be searched for additional sources. A gray literature search should also be conducted¹¹.

Studies of different methodological designs, complete, published in Portuguese, English or Spanish, in the period from 2015 to April 2020, which addressed online courses on breastfeeding developed for health professionals, were included. To locate the studies, the Medical Subject Headings Terms and Health Sciences Descriptors were used, as well as the specific descriptors for each database. As described, keywords were raised from the articles selected in the first search. At first, the following terms and their variations in English and Spanish were used: breastfeeding; breastfeeding; educational technology; online learning;

distance learning; online learning; cyberlearning; distance learning; distance education; distance training through Information and Communication Technology; teleeducation; tele-training; eLearning; health personnel; health professionals and health workers. These terms were first searched independently and then in combination with the help of a librarian.

Initially, duplicates were excluded with the help of EndNote and Rayyan. Then, the studies were selected by reading the title and the abstract, and then read in full (Figure 1). Two researchers performed the screening and reading separately, and any disagreements were resolved by consensus or by decision of a third reviewer.

According to the review protocol, data extraction was recorded on a spreadsheet that included: journal identification, author, year, country of origin of the study (where it was conducted), objectives, population and sample, methodological design, type of intervention (course-related data), study results and how they were measured, results related to the review's guiding question, and conclusion¹¹. The spreadsheet also contained a field for researcher notes and comments, implications for clinical practice, teaching, or research. The GRADE system was used to classify the level of evidence of the articles as high, moderate, low, or very low¹⁴.

For data analysis and discussion, a synthesis of the findings according to the review objective, notes on the implication of the results, and conclusion was prepared. Since this is a literature review, it was not necessary to request approval from the Research Ethics Committee. No conflict of interest was declared.

RESULTS

After exclusion of duplicates, 961 studies were obtained, whose publication occurred between 1960 and September 2020. After reading the titles and abstracts, 15 articles were selected to be read in full, independently, by two different researchers. The first classified 8 articles, while the second reader classified 10. Due to the divergence between the first two researchers, a third researcher evaluated the articles and defined the inclusion of 9 articles, which make up the final sample of the review, according to the PRISMA-ScR flowchart (Figure 1).

The articles that comprised the final sample were published between 2011 and 2020. The years with the highest number of publications were: 2017 (two articles) and 2020 (two articles). Most studies (five articles) were developed in the United States

Table 1 – Flowchart of the process of identification, selection and inclusion of studies. Campinas, SP, Brazil, 2020.

Research Steps	Evaluated Articles		Excluded Articles
Identification	Database search (n=1045)		Duplicate removal (n=84)
Screening	Title and abstract reading (n=961)		Articles that did not meet the inclusion criteria (n=946)
Eligibility	Independent reading of the articles in their entirety by 2 researchers (n=15)	Reading by the third researcher due to disagreement on inclusion of 2 articles (n=15)	Consensus on articles that did not answer the research question (n=6)
Inclusion	Articles included in the search (n=9)		

Source: Prepared by the authors, 2020.

(Table 1). As for the language, eight were published in English and one in Brazilian Portuguese.

The nine articles included address strategies for improving quality of care¹⁵⁻²³. The number of participants ranged from 54 to 26,009 participants. The number of participants was not described in one of the studies.

Regarding the method of the articles, two observational studies^{16,21}, one methodological study¹⁷, one quality improvement project¹⁸ and five quasi-experimental studies, of the before-and-after type were observed.^{15,19,20,22,23} Regarding the level of evidence (Chart 1), the articles were classified by the GRADE system as: high (one article²⁰), moderate (four articles^{15,19,22,23}), low (three articles¹⁶⁻⁸), very low (one article²¹).

The workload of the courses was not informed in 6 articles. In the 3 articles that specified the duration of the courses^{17,19,20} the hourly loads described were: 1 hour and 30 minutes; 8 hours and 45 hours. The themes addressed in the courses are shown in Chart 2.

The most frequently addressed topics in the courses were: physiology and anatomy^{15-17,21-23}; advantages and challenges of breastfeeding^{15,16,17,23}; breastfeeding management^{17,18,22,23}; the mother-baby binomial^{15,16}; infant growth and development^{15,16}; drug use during breastfeeding^{15,16,22,23}; and special needs babies^{15,16}. Other less frequently addressed topics were: nursing care for women and breastfeeding²⁰; the role of nurses in primary health care²¹; literature review on breastfeeding¹⁷; risks of not breastfeeding²²; and complementary feeding²³. Regarding teaching strategies, the use of: virtual texts and books²¹; images^{15-17,23}; clinical cases^{15-17,23}; videos²¹; and discussion forums²² were described. Learning objects were not mentioned by some authors^{18,19,22}.

In 5 studies (55.6%), pre and post-tests were applied to evaluate learning, and all of them showed an increase in participants' scores on the post-test^{15,16,20,22,23}. One study (11.1%) described a positive impact on clinical practice¹⁹. In 4 studies (44.4%) no evaluation method was described^{17-19,21}. Participant satisfaction with the course was investigated in 4 (44.4%) studies by means of a questionnaire^{16,17,20,22}.

DISCUSSION

When exploring the literature on online courses on breastfeeding as a strategy to improve the quality of care, we found that only one of them is Brazilian²¹, and most of them are North American studies^{15,16,17,18,19}. Thus, the scarcity of publications on the subject, especially in Brazil, is evident. Although it is still incipient, it has been verified that publications on online courses in the health area as a strategy to improve the quality of care or teaching have been presented in the approach of other themes, such as: basic life support²⁴, pain in neonatology²⁵, nursing process²⁶, among others.

Regarding the objectives of the studies included in this research, there was a greater focus on assessing the impact of the courses on the improvement of the knowledge and attitudes of professionals regarding the promotion and management of breastfeeding. There is a growing trend of publications on online courses in recent years, which aim to provide training to students and health professionals²⁴⁻²⁶.

As for the method and levels of evidence, the largest number was of five quasi-experimental studies, classified as moderate evidence level^{15,19,22,23} and high²⁰. Understanding the several factors under analysis for this classification, such as study design

Table 1 – Characterization of the studies included in the scoping review on online courses on breastfeeding for health professionals. Campinas, SP, Brazil, 2011-2020

Author	Year/ Country	Goal	Method/ Level of Evidence*
O'Connor et al. ¹⁵	2011/USA	To evaluate participants' basic knowledge and use of an online course for maternal and child health professionals.	Quasi-experimental study of the before-and-after type / Moderate
Lewin e O'Connor ¹⁶	2012/USA	Compare course information with breastfeeding competencies recommended by the U.S. Breastfeeding Committee.	Cross-sectional observational and analytical study / Low
Edwards et al. ¹⁷	2015/USA	Promote a Continuing Education approach for healthcare professionals through an online tutorial on maintaining successful breastfeeding after hospital discharge.	Methodological study for the development of educational material / Low
Bixby et al. ¹⁸	2016/USA	To evaluate an online course using the Moodle platform in continuing education on breastfeeding for nurses.	Quality Improvement Project / Low
Watkins et al. ¹⁹	2017/USA	Investigate whether a lactation course: expands knowledge and improves beliefs and attitudes about breastfeeding and formula use; improves practice; increases intentions to perform evidence-based practices.	Quasi-experimental study of the before-and-after type / Moderate
Colaceci et al. ²⁰	2017/ Italy	To evaluate whether the e-learning program promoted improvement in the attitudes and practice of health professionals.	Quasi-experimental study of the before-and-after type / High
Freitas et al. ²¹	2018/ Brazil	Evaluation of an online continuing education course on breastfeeding for nurses.	Cross-sectional observational and descriptive study / Very low
Colaceci et al. ²²	2020/ Italy	To evaluate the long-term effectiveness of a national online program on child nutrition for health professionals, identifying the extent to which changes in self-reported attitudes and practices are maintained one year after training.	Quasi-experimental study of the before-and-after type / Moderate
Vilar-Compte et al. ²³	2020/ Mexico	Describe knowledge and skills about basic breastfeeding of professionals and evaluate a semi-virtual training.	Quasi-experimental study of the before-and-after type / Moderate

*Level of evidence according to the GRADE system.

Chart 2 – Topics addressed in online courses on breastfeeding for health professionals. Campinas, SP, Brazil, 2011-2020.

Author	Year	Topics covered in the courses
O'Connor et al. ¹⁵	2011	Physiology and anatomy; infant growth and development; advantages and challenges of breastfeeding; breastfeeding around the world; the mother-baby binomial; the baby with special needs; drug use in breastfeeding.
Lewin e O'Connor ¹⁶	2012	Physiology and anatomy; infant growth and development; advantages and challenges of breastfeeding; breastfeeding around the world; the mother-baby binomial; the baby with special needs; drug use in breastfeeding.
Edwards et al. ¹⁷	2015	Physiology of breastfeeding; issues about infant feeding practice and choices; American Academy of Pediatrics guidelines on breastfeeding; breastfeeding management and problem solving; review of breastfeeding literature.
Bixby et al. ¹⁸	2016	Lactation, how to promote the initiation of breastfeeding and management of milk extraction (pumped and manual).
Watkins et al. ¹⁹	2017	Not described
Colaceci et al. ²⁰	2017	Update on breastfeeding and human lactation.
Freitas et al. ²¹	2018	Nursing care to women and breastfeeding: the nurse's role in primary health care,
Colaceci et al. ²²	2020	Lactation physiology and how to manage it; duration of exclusive breastfeeding; breastfeeding and the use of medications; maternal nutrition during breastfeeding; risks of not breastfeeding.
Vilar-Compte et al. ²³	2020	General concepts and advantages of breastfeeding, focusing on the WHO recommendations; definition of exclusive breastfeeding; how to express and store human milk; how to introduce complementary feeding. Clarifications about breastfeeding according to the nursing woman's health conditions and when she uses medication. Clinical skills to promote breastfeeding, taking into account its challenges.

and its limitations, inconsistencies, publication bias and indirect evidence – lack of direct comparison between interventions¹⁴, the design and the presence of indirect evidence were the aspects that most influenced the result of this classification.

Regarding the course workload, a significant difference between them was noted. Moreover, when the authors describe the topics covered^{17,20}, they do so very succinctly, not allowing a discussion about the relationship between the length of the course and the depth of the topics covered.

Regarding the topics covered, it was considered that the authors were concerned about addressing not only knowledge, but also attitudes and skills of professionals as a strategy to improve the quality of care in relation to the promotion and maintenance of breastfeeding. The urgency of behavioral change was emphasized in a study that assessed the impact of COVID-19 on breastfeeding support. In addition to discussing the need for practices to adapt and evolve to the new context, the authors described the successful use of technology in the follow-up of nursing mothers after hospital discharge²⁷.

Regarding teaching strategies, it was observed the use of tools that favor a critical and reflective participation, allowing the active role of the participant in his learning process as in clinical cases^{15-17,23} and discussion forums as well as the use of learning triggers through virtual texts and books²¹, images^{15-17,23} and videos²¹. When meaningful learning is the objective, previous knowledge is considered determinant in the construction of new knowledge, and it should be problematized, thus favoring the development of critical and reflective capacity in relation to what is being done. Such learning promotes proactivity, through the commitment to the educational process, linkage of learning to significant aspects of reality, development of reasoning and capacities for intervention in one's own reality, as well as collaboration and cooperation among participants²⁸.

Among the courses that included some evaluation method, most were limited to comparing pre – and post-test scores^{15,16,20,22,23}. Only one study evaluated improvement in the attitudes of professionals. The evaluation with the use of pre – and post-tests

is used with the objective of synthesizing what was learned, being punctual and called summative evaluation, which differs from formative evaluation. The latter reinforces learning and is continuous, focusing not only on cognitive but also on affective and psychomotor skills. That said, in order to measure the achievement of the learning objectives of the proposed course, we recommend the use of these two types of assessment to verify its effectiveness²⁹.

Knowing the level of satisfaction of the participants in relation to the course expectations, by means of a structured evaluation or feedback, is also paramount. The satisfaction of the participants regarding the course was investigated in 4 (44.4%) of them, through the application of a questionnaire^{16,17,20,22}. The feedback is essential in this process in order to make a situational diagnosis and understand the reality, showing the potentialities and points to be improved in the course offered³⁰.

The use of technology for teaching and training health professionals to improve clinical practices has also been widely used to support and promote breastfeeding, especially after hospital discharge. In addition to the use of smartphones and cell phone applications, the literature describes the use of the Internet as a tool to promote discussion forums and consultation to solve doubts of nursing mothers. Therefore, being familiar with the digital environment has become an important skill not only for professionals to develop knowledge, but also to share it³¹⁻³³.

Taking into account these new trends, the development of online courses is relevant, as well as the self-evaluation of participants and the publication of detailed data on the process of proposition, implementation, and evaluation of courses. This is so that they can be improved^{24-26,32,33}. However, in the current review we found the absence of important details in the content of the articles: number of participants, course hours, the existence of satisfaction surveys about the course, and evaluation methods about the participants' learning.

The use of an instrument to evaluate the learning objects and the level of participant satisfaction can help in the feedback about the quality of the courses to the respective authors²⁵. The

instrument proposed by the Central Coordination of Distance Education (CCEAD – PUCRIO) promotes the evaluation of several items, such as: the clarity and ease of locating information; the relevance of the content; aesthetics; audiovisual resources; interactivity; user support (information and help resources); among many other relevant aspects³⁴.

Thus, the findings of the present review offer few subsidies regarding the structuring and construction of online courses, due to the omission of relevant information, which may denote methodological fragility. Studies on the use of technology as an educational tool suggest the Analysis-Design-Development-Implementation-Evaluation (ADDIE) instructional design as a guide for structuring and building courses. Therefore, by following the proposal of the ADDIE system, authors can perform a continuous evaluation of the learning process they are structuring, which allows the correction of errors or omissions, ensuring greater effectiveness of the final product^{24,25}. Thus, we identified not only the knowledge gap regarding the quantity of existing courses on this topic, but also the quality of their description.

CONCLUSION

We identified only 9 studies, published between 2011 and 2020, that addressed online courses on breastfeeding in order to improve health care in this context. Although the demands for continuing education, as well as for improved quality of care, are constant and online courses represent a practical and efficient way for the service and health professionals to meet them, few studies were identified that applied this strategy.

Moreover, the absence of relevant information in most of the included articles demonstrated their methodological fragility. Thus, there is an urgent need to encourage scientific production with more robust methods on the structuring and construction of online courses for health professionals on breastfeeding, aimed at improving the care of nursing mothers and their children, including the description of learning objectives and evaluation methods.

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