



A systematic literature review : The effectiveness of electronic information as a health promotion media to support exclusive breastfeeding

*Budi Susilawati¹, Ellyda Rizki Wijhati¹

¹Universitas Gadjah Mada Academic Hospital

*Correspondency: bsusilawati75@ugm.ac.id

Submitted: July 2020

Revised : September 2020

Accepted: November 2020

Abstract

Introduction: Neonates around the world who receive exclusive breastfeeding after three or four months are around 35%. The Indonesian government sets a national target of exclusive breastfeeding of 80%. Unfortunately, Indonesia failed to reach the target since only 30,2% was achieved.

Objective: Find out the effectiveness of Electronic Information Media as a Health Promotion for Exclusive Breastfeeding.

Methods: Data sources were obtained from PubMed and ScienceDirect. The inclusion criterias are Lactating mothers, pregnant women, health workers, full text, articles of 2011-2019, international and national journals. Study appraisal and synthesis method using JOANNA BRIGS 8 Questions to Help You Make sense of a Quantitative Research used as study appraisal method, and PEOS Modification used as the synthesis method.

Result: The World Health Organization recommended that babies exclusively breastfed in the first six months of life and this practice continues until the age of two with complementary food. Exclusive breastfeeding for six months was the optimal method of infant feeding. Health promotion was one of the methods used to reduce health problems, several methods used were the use of leaflet media, film media, audio-visual media, Web and cell phone, video-based content and programs for Women, Infants, and Children (WIC) which providing breastfeeding peer counselors (BPC). The selection of these methods expected to increase knowledge, attitudes, and behavior of the community, especially mothers, to exclusively breastfeed.

Conclusion: Electronic media such as films, audio-visual media, websites, and effective cellular phones are used as a medium for breastfeeding health promotion.

Keywords: *Electronic Information media, exclusive breastfeeding, health promotion*

1. Introduction

Exclusive breastfeeding for six months is the optimal method for providing nutrition for infants. Breastfeeding means giving infant nutrition for healthy growth, infant development, and immune system enhancement. There are efforts implemented to promote breastfeeding in many countries. Many research showed that breastfeeding supports sensory and cognitive development while protecting babies against infectious and chronic diseases. Breastfeeding can reduce infant mortality due to common childhood illnesses such as diarrhea or

pneumonia and accelerate recovery during illness. There is good evidence that exclusive breastfeeding for six months provides babies with protection against gastrointestinal infections and iron deficiency anemia¹.

Exclusive breastfeeding is an essential strategy for the health and well-being of infants and women. The World Health Organization recommends that mothers exclusively breastfed infants in the first six months of life continues until the age of two with complementary food². Neonates around the world who receive exclusive breastfeeding after three or four

months of life are only around 35%. In Spain, this percentage ranges from 20% to 30%³.

The Indonesian government sets 80% as the national target of exclusive breastfeeding. Unfortunately, Indonesia failed to reach the target because only it was only 30.2 % achieved. Many factors influence mothers' decision to breastfeed. There are breast problems, birth methods, level of education, supports from husband and family, and employment status. The level of exclusive breastfeeding among female workers in Indonesia is deficient because the percentage is only 19 %. Working mothers have a higher risk of stopping breastfeeding earlier than mothers who stay at home⁴.

Mothers' knowledge and attitude about breastfeeding is an essential factor influencing the duration of breastfeeding. WHO has published the benefits of breastfeeding, especially exclusive breastfeeding. It is necessary to be given after birth to the first six months of infants' life and continue for two years or more with complementary foods⁵. The issues of infant feeding are mothers who use formula milk, who feel unsupported and not worthy, who feel less prepared for problems when breastfeeding, and others who may not get access to breastfeeding support⁶.

Breastfeeding is the best and most appropriate way of providing food or milk to improve the quality of human resources at the beginning of its growth. It is because breast milk contains various nutrients needed for the baby's growth and development of specialized organs. Besides that, breast milk contains antibodies that can protect infants against illness and death from infectious diseases in the first year of life. Efforts to increase the percentage of exclusive breastfeeding have been carried out, such as doing health promotion. Unfortunately, these activities have not shown optimal results, especially in terms of media use⁷.

In the United States, 98% of all births in hospitals are where nurses are primary health care providers who support women from birth to recovery steps. Nurses have essential roles, such as preparing, educating, encouraging, and supporting women to breastfeed and facilitating

the continued progress of mothers' breastfeeding.

Nurses and other health professionals who take care of mothers and infants must have the knowledge and competencies needed to provide the actual information and support the preconception, prenatal, and postpartum periods⁸.

Nowadays, information technology and telecommunications have a role as the most dominant sector. The development of information technology has developed in various types of activities, such as e-government, e-commerce, e-education, e-medicine, e-laboratory, and others, all of which are related to electronics⁹.

Health promotion is a method used to decrease health problems. One example is the use of the audio-visual method. The implementation of this method aims to increase health knowledge and behaviors in society¹⁰. The general aim of this systematic literature review is to find out the effectiveness of electronic information as a health promotion media of breastfeeding.

2. Materials and Methods

This research is a systematic literature review that used Pubmed and Science Direct search systems with a literature elimination strategy according to inclusion criteria. The research strategy used to find the literature is by using the PEOS method and making questions. The first step was finding the articles. There were 252 articles identified. After that, there was a review step that filtered the articles into 184 articles based on inclusion and exclusion criteria. The last was the final filtering, which selected appropriate and complete references on the effectiveness of electronic information media as health promotion for exclusive breastfeeding using electronic information media.

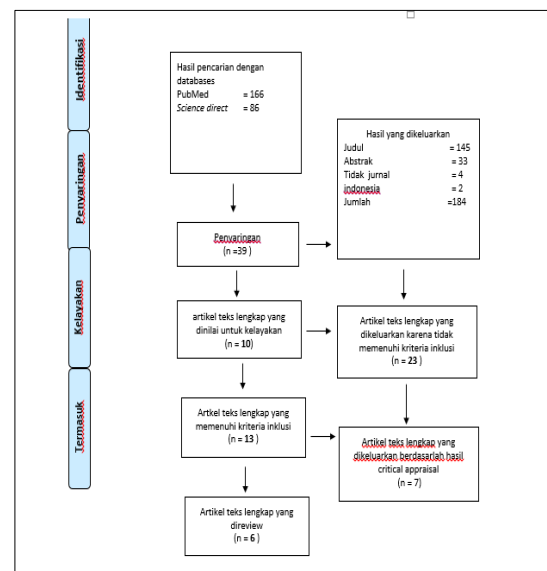
Table 1. The Inclusion and Exclusion Criterias

Criteria	Inclusion	Exclusion
Population	Pregnant mothers, breastfeeding mothers, and health workers	Pregnant women and breastfeeding mothers who have infectious disease and mothers who do not allow to breastfeeding
Exposure / Event	The effectiveness of electronic information media as a health promotion of breastfeeding	
Outcomes	Promotion model of breastfeeding by using electronic information media	
Study Design	Quantitative	

As a result, there were some articles obtained for critical appraisal. Then, the writer conducted an assessment by analyzing the effectiveness of electronic information media as a health promotion of exclusive breastfeeding using a quantitative. The critical appraisal research

design in the literature was eliminated from the inclusion criteria. The studies used eight questions of Joanna Briggs to help the articles made sense of quantitative research.

The, further article screening was carried out to find appropriate and complete references regarding the support of health workers for the promotion of exclusive breastfeeding using electronic information media and 6 articles were obtained for critical appraisal, and the authors conducted a final review.



3. Results and Discussion

The results of systematic findings obtained articles published in 2011-2019. The articles of data sources were from China (n = 1), Brazil (n = 1), South Africa (n = 1), Australia (n = 1), United States (n = 1), Indonesia (n = 1). The six articles are Q1 quality journals, and all articles use a quasi-experimental research design.

Table 2. The extracted Result from Journals

No	Title/Authors/Years	Country	Purpose	Kind of research	Data collection	Participant	Finding
1	Educational videos for practitioners attending Baby Friendly Hospital Initiative workshops supporting breastfeeding positioning, attachment and hand expression skills: Effects on knowledge and confidence ¹¹ .	China	This study aimed to determine whether knowledge and confidence in practice have increased after seeing the results of the video for improvement and will be needed for improvement in practice	Randomized quasi experimental	Compare the effects of educator and practitioner demonstration training video compare to clinical videos.	The group of visiting midwives, doctors, and supporting staffs (117 people)	This study shows improvements in knowledge and confidence as the choice of mother and baby
2	Telephone intervention in the promotion of self-efficacy, duration and exclusivity of breastfeeding: randomized controlled trial ¹² .	Brazil	This study aimed to evaluate the effect of phone intervention on maternal adherence to exclusivity and duration of breastfeeding	Randomized controlled trial	Samples were randomized into two groups, which are control group and intervention group. The intervention group consisted of follow up calls carried out on days 7, 15, and 30 days after give birth using the motivation interview method and compliance in breastfeeding	Respondents consisted of 85 breastfeeding mothers at 2 months of age and 77 mothers at 4 months of age	Maternal adherence to breastfeeding at 2 months of age was the same in both groups (p=0,773). However, at 4 months of age, adherence in the intervention group was higher than in the control group (p=0,011). There was a difference between groups in the duration of breastfeeding at 2 months (p=0,035).

No	Title/Authors/Years	Country	Purpose	Kind of research	Data collection	Participant	Finding
							<p>At 4 months, the intervention group continued to breastfeed when compared to the control group (p=0,109). The two groups did not show any difference in exclusive breastfeeding at 2 months (p=0,983) and four months (p=0,573). Conclulsion: telephone educational interventions are effective in increasing breastfeeding adherence and duration, but not exclusive brestfeeding</p>
3	<p>The Philani MOVIE study: a clusterrandomized controlled trial of a mobile video entertainment-education intervention to promote exclusive breastfeeding in South Africa¹⁴.</p>	South Africa	<p>a. Building the effectiveness of film interventions to improve the practice of exclusion breastfeeding b. Effectiveness of film interventions to improve other infant feeding practices and knowledge of mothers about infant feeding c. Use a human-centered design principles when applied to the development</p>	Randomized controlled trial	<p>Samples will be randomized into an intervention group and a control group, grouped by type of environment. The mentor in the control group will provide standard of care (SoC) for home perinatal counseling. Mentors in the intervention group</p>	84 public health cadres employed by the Philani Maternal Child Health and Nutrition Trust and 1008 pregnant participants will be enrolled in the study and mother-child pairs will be enrolled for up to 5 months after giving birth	<p>The FILM intervention description consists of 13 short (2-5 min). Educational videos made over 10 months in collaboration with community members and local stakeholders in maternal-child health. The health message on each video corresponds to the latest WHO recommendations for infant feeding, made in</p>

No	Title/Authors/Years	Country	Purpose	Kind of research	Data collection	Participant	Finding
			of mobile health interventions d. Describe the mechanism for intervention action and acceptance of interventions for public health cadres		will provide a standard of care (SoC) and FILM interventions		English and the language most widely spoken among study participants. The video is made simple and avoids medical terms.
4	Can a phone call make a difference? Breastfeeding self-efficacy and nurse responses to mother's calls for help ¹⁸ .	Australia	This study aimed to examine the telephone interactions between nurses and mother during 24 hours at the Australian Child Health Help Line in dealing with breastfeeding problems.	Qualitative study	This study proved that mother's adherence was a modifiable variable. Health professionals, especially child health nurses and midwives, were also place to support maternal breastfeeding beliefs.	12 nurses who were staff of the Children's Health Line during the study period participated in this study. The participating nurses were general nursing and postgraduate midwifery and/or child health nurses who have not received specific training in telephone counseling. The callers were members of the general public accessing Child Health Pathways from urban Australia and remote areas seeking information on infant feeding. Callers were predominantly mothers (93%, n ^{1/4} 138), a small proportion were fathers (6%, n ^{1/4} 7) or other family members or friends (1%, n ^{1/4} 2)	This study proved that professional telephone support has the potential to promote breastfeeding adherence.

The effectiveness of electronic information as health promotion media of exclusive breastfeeding needs supports from health workers, government, and community supports.

One of the potential ways to foster long-term communication is to include health interventions through the Web and cell phones. It is because the use of these interventions becomes an integral component of daily activities, both nationally and globally. Nowadays, the web-based intervention about breastfeeding mainly focuses on providing educational information for mothers and providing lactation support via email and social media. It could increase the continuity of six-month breastfeeding among mothers in Australia. Furthermore, mothers can have continuous monitoring after the recovery from the hospital. It also benefits from maintaining communication between mothers and lactation counselors. The continuity of health care can optimize the intake of newborns and minimize the risk of dehydration, hypoglycemia, jaundice, weight loss, and 30-days hospitalization if there are breastfeeding problems¹³.

The entertainment-education approach as a health education seems to be a promising strategy for promoting health behavior change. Scientific evidence shows that entertainment-education is a practical approach to beliefs, attitudes, positive influences, and behaviors, especially in populations with low motivation or lack of cognitive ability. Entertainment-education is a substantial health education method. The characteristics are compelling narratives and high production quality, and persuasive messages that are not disruptive to be involved with the presenter or the character described. Video-based content for mobile devices can also facilitate more understanding of health education. The recent invention in cellular messaging promoted the health messages on mobile phones and tablets for health education¹⁴.

Most women get some information about breastfeeding during pregnancy. Mothers who choose to breastfeed are usually aware of some benefits both for the baby and for themselves. Mothers who choose not to breastfeed are worried about the pain breastfeeding, time

constraints, returning to work, personal health, or the uncomfortable feeling of breastfeeding. Some factors that facilitate breastfeeding are health care providers who encourage practice, consider the benefits, attend breastfeeding classes or support groups, breastfeed at birth, and join care. The reasons to apply formula feeding and stop breastfeeding are due to pain, the limited intensity of breast milk, and separation between mother and baby¹⁵.

A supportive community of breastfeeding notices that it is vital to have a dialog from the society and the stakeholders. Community dialogue is a process that involves community members to identify their community needs, assets, and goals. It also encourages an understanding between stakeholders, applies ethical and sustainable actions to increase breastfeeding support, and then prioritizes the approach. Community dialogue is an excellent way to share information based on health issue research. Dynamically, sharing information is highly adapted to the community to produce actions and sustainable changes¹⁶.

The breastfeeding promotion may vary based on the age of the mothers. For teenage mothers, health workers should encourage them to breastfeed by joining or rooming in with their babies while in the hospital because it is essential to reduce the gap in breastfeeding. The use of pacifiers in infants from teenage mothers requires further exploration¹⁷.

Promotion Model for Exclusive Breastfeeding Using Electronic Information Media

There is a helpline of Australian children's health, which related to a breastfeeding problem. This study revealed that a person's confidence modified by positioning the health professionals, especially child health nurses and midwives, to support breastfeeding beliefs. Many new mothers needed to seek supports from the health professionals primarily in the first week postpartum. The role of health care professionals in promoting their confidence in breastfeeding also extended from the postpartum period. Mothers experience reduced confidence in breastfeeds ability at essential points throughout

the infants' development. They often seek professional support to overcome the problem.

Confidence may be most vulnerable in the early postpartum period related to the time mothers often receives professional support. In this study, the support potentials in the crisis time were significant because the effectiveness of the interaction can affect mothers' confidence¹⁸.

Various strategies implemented aims to increase the willingness to breastfeed among low-income women, especially African-Americans. Researchers have proven that those role models have a positive influence on breastfeeding initiation for African American mothers. Women, Infants, and Children (WIC) promote breastfeeding support by providing additional food packages to support nutrition for nursing mothers and using peer counselors in breastfeeding. Switching from formula feeding to breastfeeding is essential because it has many benefits. The Women, Infants, and Children (WIC) program provides breastfeeding peer counselors (BPC) as emotionally and socially supports for new breastfeeding mothers. BPC are mothers who have breastfeeding experience and anyone who can provide emotional support and information about successful tips in breastfeeding. The basic requirements fo BPC are they must contact WIC participants at least once during their pregnancy, communicate with new mothers in every 2-3 days of 7-10 days in postpartum, contact every woman within 24 hours if there are reports of breastfeeding difficulties. Moreover, breastfeeding peer counselors (BPC) must make a referral if the problems continue¹⁹.

4. Conclusion and Suggestions

Electronic media such as films, audio-visual media, websites, and cellular phones are used as media to promote breastfeeding health. The use of electronic media has to be done as a health promotion to encourage mothers' belief about exclusive breastfeeding

Families should be included as a supporting system, to promote exclusive breastfeeding for mothers. Educating the importance of exclusive breastfeeding begins early in pregnancy.

REFERENCES

1. Khresheh R, Suhaimat A, Jalamdeh F, Barclay L. The effect of a postnatal education and support program on breastfeeding among primiparous women: A randomized controlled trial. *International Journal of Nursing Studies*. 2011; 48(9):1058–65. <https://doi.org/10.1016/j.ijnurstu.2011.02.001>.
2. Muda CM, Ismail TAT, Jalil RA, Hairon SM, Sulaiman Z, Johar N. Postnatal breastfeeding education at one week after childbirth: What are the effects?. *Women and Birth*. 2019; 32 (2): e243–51. <https://doi.org/10.1016/j.wombi.2018.07.008>.
3. Galiano JM, Rodríguez MD. Early initiation of breastfeeding is benefited by maternal education program. *Revista da Associação Médica Brasileira (English Edition)*. 2013; 59 (3): 254–57. [https://doi.org/10.1016/S2255-4823\(13\)70465-X](https://doi.org/10.1016/S2255-4823(13)70465-X).
4. Basrowi RW, Sastroasmoro S, Sulistomo AW, Bardosono S, Hendarto A, Soemarmo DS, et al. Developing a workplace lactation promotion model in Indonesia using Delphi technique. *Archives of Public Health* 76. 2018. Article number:70. <https://doi.org/10.1186/s13690-018-0312-2>.
5. Inoue M, Binns CW, Katsuki Y, Ouchi M. Japanese Mothers' Breastfeeding Knowledge and Attitudes Assessed by the Iowa Infant Feeding Attitudes Scale. *Asia Pacific Journal of Clinical Nutrition*. 2013; 22 (2): 261–65. <https://doi.org/10.6133/apjcn.2013.22.2.08>.
6. Trickey H, Newburn M. Goals, Dilemmas and Assumptions in Infant Feeding Education and Support. Applying Theory of Constraints Thinking Tools to Develop New Priorities for Action. *Maternal & Child Nutrition*. 2014; 10 (1): 72–91. <https://doi.org/10.1111/j.1740-8709.2012.00417.x>.
7. Suhertusi B, Desmiwati D, Nurjasmi E. The Effect of Health Promotion Media on Exclusive Breastfeeding on Increasing Mother's Knowledge in the Work Area of the Lubuk Begalung Padang Health Center in 2014. *Andalas Health Journal*. 2015; 4 (1).

- <http://jurnal.fk.unand.ac.id/index.php/jka/article/view/177>.
8. Association of Women's Health, obstetric and Neonatal Nurses' official position statement. Breastfeeding. *Journal of Obstetric, Gynecologic & Neonatal Nursing*. 2015; 44 (1): 145–50. <https://doi.org/10.1111/1552-6909.12530>.
 9. Wardiana, W. t.t. “Development of Information Technology in Indonesia*,” 6.
 10. Wicaksono D. The Influence of Audio-visual media related to Complementary Feeding of Breast Milk on Knowledge, Attitude, and Behavior of Baduta Mother in Puskesmas Johar Baru *ETHOS: Jurnal Penelitian dan Pengabdian*. 2016; o(0): 291–98. <https://doi.org/10.29313/ethos.voio.1974>.
 11. Wallace LM, Ma Y, Qiu LQ, Dunn OM. Educational Videos for Practitioners Attending Baby Friendly Hospital Initiative Workshops Supporting Breastfeeding Positioning, Attachment and Hand Expression Skills: Effects on Knowledge and Confidence. *Nurse Education in Practice*. 2018; 31 (Juli): 7–13. <https://doi.org/10.1016/j.nepr.2018.04.005>.
 12. Chaves AFL, Ximenes LB, Rodrigues DP, Vasconcelos CTM, Monteiro J, Oriá MOB. Telephone intervention in the promotion of self-efficacy, duration and exclusivity of breastfeeding: randomized controlled trial. *Revista Latino-Americana De Enfermagem*. 2019; 27: e3140. <https://doi.org/10.1590/1518-8345.2777-3140>.
 13. Ahmed AH, Ali MR, Kinga S, Lingsong Z, Demetra K. The Effect of Interactive Web-Based Monitoring on Breastfeeding Exclusivity, Intensity, and Duration in Healthy, Term Infants After Hospital Discharge. *Journal of Obstetric, Gynecologic & Neonatal Nursing*. 2016; 45 (2): 143–54. <https://doi.org/10.1016/j.jogn.2015.12.001>.
 14. Maya A, Mark T, Ingrid LR, Amnesty EL, Shannon AM, Jamie J, et al. The Philani MOVIE Study: A Cluster-Randomized Controlled Trial of a Mobile Video Entertainment-Education Intervention to Promote Exclusive Breastfeeding in South Africa. *BMC Health Services Research*. 2019; 19(1): 211. <https://doi.org/10.1186/s12913-019-4000-x>.
 15. Cottrell BH, Detman LA. Breastfeeding Concerns and Experiences of African American Mothers. *MCN. The American Journal of Maternal Child Nursing*. 2013; 38 (5): 297–304. <https://doi.org/10.1097/NMC.0b013e31829a5606>.
 16. Jenn A, Rebecca AK, Sara AMD, Lois T, Mary S, Julia Y, Heidi G, et al. Brookings Supports Breastfeeding: Using Public Deliberation as a Community-Engaged Approach to Dissemination of Research. *Translational Behavioral Medicine*. 2017;7(4):783–92. <https://doi.org/10.1007/s13142-017-0480-6>.
 17. Sipsma HL, Jones K, Nickel NC. Hospital Practices to Promote Breastfeeding: The Effect of Maternal Age. *Birth (Berkeley, Calif.)* 2017; 44 (3): 272–80. <https://doi.org/10.1111/birt.12284>.
 18. Gallegos D, Cromack C, Thorpe KJ. Can a Phone Call Make a Difference? Breastfeeding Self-Efficacy and Nurse Responses to Mother's Calls for Help. *Journal of Child Health Care: For Professionals Working with Children in the Hospital and Community*. 2018; 22 (3): 433–46. <https://doi.org/10.1177/1367493518757066>.
 19. Robinson K, VandeVusse L, Foster J. Reactions of Low-Income African American Women to Breastfeeding Peer Counselors. *Journal of Obstetric, Gynecologic & Neonatal Nursing*. 2016; 45(1):62–70. <https://doi.org/10.1016/j.jogn.2015.10.011>.