



Development of Breastfeeding Technique E-Modules for Postpartum Mothers

Ni Made Dwi Mahayati, I Komang Lindayani, Ni Wayan Suarniti, Ni Komang Erny Astiti, Ni Wayan Armini

Poltekkes Kemenkes Denpasar, Bali, Indonesia
mahayati_dwi@yahoo.com

Abstract. The low proportion of exclusive breastfeeding, which is 20.3%, can contribute increasing the number of stunting. Mothers need to get education about proper breastfeeding techniques to have successfully breastfeeding experiences. Currently, information provided through MCH books and need to develop educational media which accessible through digital access it is e-modules. This study aims to develop an e-module on breastfeeding techniques. Research and Development technic with ADDIE stages were applied. Study literature and questionnaires to 96 postpartum mothers as identification method and designing e-modules using the Canva application. Testing of the e-module design involved education and midwifery experts and a limited trial was conducted on 10 postpartum mothers. Expert validation analysis showed that the e-modules compiled were very feasible (89,4%) and the results of limited trials were very practical (88,5%). It is hoped that the use of the e-module on breastfeeding techniques will be a practical and interesting educational medium for postpartum mothers.

Keywords: Lactation, Breastfeeding Technique, Postpartum.

1 Introduction

One of the government programs to support children's health is to support the implementation of breastfeeding since newborns. It is been an important thing because from breast milk the baby will get all nutrients to support the growth. Breastfeeding is the right of every child and every mother who gives birth must provide exclusive breastfeeding for her baby [18]. Exclusive breastfeeding reduces the risk of diarrhea, otitis media, urinary tract infections, allergic diseases, pneumonia and protein energy malnutrition [15, 19].

Until now, the fulfillment of the right to exclusive breastfeeding for children has not been fully fulfilled, this can be seen from the data, which lower than 50% with the lowest proportion of 20.3% [13, 16]. This figure has not improved from the previous year and even tended to decrease. Not fulfilling exclusive breastfeeding can cause nutritional problems in children. Low coverage indicates the lack of success of breastfeeding. If this situation is allowed to continue, children's quality of life will affected, even as one of the triggering factors for stunting in children [2].

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Knowledge as one of the factors causing low exclusive breastfeeding because behavior will be more directly accepted based on knowledge [7, 21]. Knowledge also has implications for Breastfeeding Self Efficacy (BSE) which directly influences the success of exclusive breastfeeding with $p=0.001$ [5,13]. Mothers with high BSE tend to choose to breastfeed, persist when faced with a problem, uses self-encouraging thoughts, and reacts positively to perceived difficulties.[24] Research shows that ineffective breastfeeding techniques are still high [5, 27]. About 61% of mothers have been taught breastfeeding techniques by health provider and family, but only 45% have the correct breastfeeding techniques [5].

Postpartum mothers currently obtain information about exclusive breastfeeding and breastfeeding techniques through the MCH handbook, but it is still limited because the information in the MCH handbook covers a lot of information from pregnancy to toddlers. The results of the study showed that breastfeeding education and follow-up counseling given before discharge from the hospital were effective in the success of breastfeeding mothers [26]. Currently, postpartum mothers tend to choose online information media that are more practical, easy to use and easily accessible through digital access, for example through e-modules. It is necessary to develop e-modules that can facilitate postpartum mothers in understanding correct breastfeeding techniques and increase BSE in postpartum mothers. Current technological developments make the process of providing education easier through e-modules. The information presented in the e-module is a combination of written and computer information so that the information presented can be structured and interesting [4, 14].

2 Method

This research method was R&D using the ADDIE design with the stages of Analysis, Design, Development, Implementation and Evaluation [15]. Needs analysis was carried out through literature study and distribution of questionnaires to 96 postpartum mother respondents using a purposive sampling technique at four Community Health Centers in Badung Regency, Bali. The results of the needs analysis are used as a reference at the design stage, namely designing the e-module using the Canva application. At the development stage, 2 education and midwifery experts created and validated using a questionnaire with a Likert scale. The next stage is implementing and evaluating the e-module by conducting a limited trial on 10 postpartum mothers using a questionnaire. Validation indicators consist of appropriateness of content, language, presentation, independent learning aspects and graphics. This research has received an ethically proper letter from the Ethics Commission of the Poltekkes Kemenkes Denpasar No. LB. 02.03./EA/KEPK/0653/2021. The results of the expert assessment were concluded using the following criteria in Table 1 as follows:

Table 1. Criteria of the Validation.

Level of Achievement	Criteria	Category
81-100%	Very good	Very feasible / practical
61-80%	Good	Feasible/practical
41-60%	Quite Good	Less feasible/practical
21-40%	Not Good	Not feasible/practical
<20%	Very bad	Very unfeasible/unpractical

3 Result and Discussion

The e-module development was carried out through the ADDIE stages with the following results:

3.1 Analysis

At this stage, a needs analysis was carried out through literature study and a survey of 96 respondents using a questionnaire. The search includes the context of efficacy and problems faced by mothers during breastfeeding. The results of the analysis show that the majority of postpartum mothers still have low BSE scores [1]. This is an inhibiting factor in successful breastfeeding because it is related to the mother's confidence in breastfeeding.

BSE is a mother's self-confidence to be able to provide breast milk. If the mother's BSE is low, it shows that the mother's commitment and confidence is also low, which can result in the failure of exclusive breastfeeding. Mothers with low BSE tend to have low self-confidence, confidence and motivation. The mother's lack of effort will make it easier for the mother to give up on breastfeeding and prefer giving formula milk. This is also reflected in several research results which state that a low level of efficacy results in failure to provide exclusive breastfeeding [24]. Successful breastfeeding requires the mother's commitment and confidence in her ability to breastfeed as indicated by the mother's BSE score. Mothers with high BSE tend to choose to breastfeed [25]. BSE was significantly has a positive relationship with breastfeeding [11]. Interventions such as health education and counselling are recommended to reinforce BSE in breastfeeding mothers [10].

Identify problems from respondents where there are still respondents who do not use appropriate breastfeeding techniques. This can be caused by the mother's lack of knowledge. Previous research shows that the educational programs given to mothers can improve knowledge, attitudes and efficacy of breastfeeding [12, 20]. Knowledge of correct breastfeeding techniques is necessary for successful breastfeeding and exclusive breastfeeding. Carrying out correct breastfeeding techniques not only provides comfort for the baby but also for the mother. Breastfeeding technique, starting from

preparation, position and attachment, is an important key to successful breastfeeding. Breastfeeding involves the contribution of hormones in the body. Breastfeeding with the correct technique will also provide comfort for the mother so that the hormonal process will also be better.

Another identification found was that there were still many problems experienced by mothers when breastfeeding. The most common breastfeeding problem is sore nipples which are related to inappropriate breastfeeding techniques [6, 17]. The problem of sore nipples can be avoided with a good attachment position. The correct position when breastfeeding is for the baby to insert the nipple and most of the mammary areola so that not only the nipple is sucked by the baby.

Furthermore, based on the identification that has been carried out, it can be seen that the current need is to increase knowledge regarding correct breastfeeding techniques. Research shows that although computer-based education appears to be an efficient way to convey breastfeeding information, there are perceived barriers to using the technology due to lack of experience [9]. Thus the e-module on breastfeeding techniques can be used as a guide for postpartum mothers towards a better breastfeeding process because it is more simple than other online educational method.

3.2 Design

Based on the analysis that has been carried out, the next step is to design the e-module that will be developed. The e-module systematics prepared by the researcher consist of: module cover, foreword, table of contents, module introduction, instructions for using the module, expected goals after studying the module, learning unit and conclusion. There are 5 learning units in the module, namely the concept of breast milk, the concept of lactation, breastfeeding positions, assessing the adequacy of breast milk and assessing breastfeeding problems. The material provided is not just written but also includes pictures and examples in the form of video tutorials to make it easier for postpartum mothers to understand.

The presentation in the E-module is arranged in stages, starting from a general explanation of the concept of breast milk and lactation, then a more detailed explanation of breastfeeding techniques. Understanding basic material about the concept of breastfeeding is important as a basis for mothers to increase self-confidence (efficacy) that every breastfeeding mother can have the ability to breastfeed. This supports the basic understanding and ability of module users to be able to learn independently with the help of the module. The e-module was created using the Canva application by including a video tutorial link uploaded to YouTube media.

The e-module on breastfeeding techniques is equipped with steps for breastfeeding using sitting and lying down techniques. These two breastfeeding techniques are the most common breastfeeding techniques and are relatively easy to do. Step by step is explained in detail so that readers are able to follow and do it correctly. A summary of the material is also written in the e-module to emphasize the important parts that must be remembered. The practice questions in each chapter are intended to enable readers to evaluate the level of understanding achieved after learning using the e-module. E-modules are arranged not monotonously for the reader. Studies show that the learning

process becomes monotonous if there is a lack of variety in learning media and methods, learning always prioritizes learning outcomes rather than paying attention to the learning process [22].

3.3 Development

At this stage is the validity test stage by Education experts and Midwifery experts. Assessment aspects include appropriateness of content, language, presentation, independent learning aspects and graphics. The assessment results from the two experts obtained a validity of 89.4%, which shows that the e-module is very feasible. The results of the expert validity test can be seen in Table 2:

Table 2. Expert Validity Test Results.

Assessment Aspects	Criteria	Category
appropriateness of content	90%	very feasible
language	90%	very feasible
presentation	91%	very feasible
independent learning aspects	90%	very feasible
graphics	86%	very feasible
average	89,4%	very feasible

Based on the results of validation tests from experts as shown in Table 2, it can be concluded that the e-module developed is very feasible. The advice from experts is to adapt the module components used by the Ministry of Higher Education.

3.4 Implementation and Evaluation

After improvements have been made according to expert input, an e-module trial is then carried out. The limited trial involved 10 postpartum mothers by giving questionnaires to postpartum mothers. Based on the results of a limited trial on postpartum mothers regarding the e-module draft, a score of 88.5% was obtained, which shows that the e-module that was prepared was very practical. The results of the limited trial can be seen in Table 3.

Table 3. Limited Trial Results.

Assessment Aspects	Criteria	Category
appropriateness of content	87,2%	very practical
language	90%	very practical
presentation	88,6%	very practical
independent learning aspects	91%	very practical
graphics	85,8%	very practical

average

88,5%

very practical

4 Conclusion

Development of an e-module on breastfeeding techniques as a learning tool for postpartum mothers. This e-module was developed to improve mothers' ability to breast-feed using the correct technique. Through the ADDIE stages, e-modules are intended as practical educational media created with templates and layouts that are attractive and easy to understand. Presentation of material is not only in written form but also in the presentation of images and graphics. The results of the validity test from education experts and midwifery experts who assessed it in terms of appropriateness of content, language, presentation, independent learning aspects, and graphics showed that the e-module was very feasible. These results are strengthened by the results of limited trials on postpartum mothers which show that the e-module prepared was very practical. This e-module can be used as a reference for midwives in providing breastfeeding education to postpartum mothers. The e-module being developed will be further tested if an effectiveness test is carried out. This has not been implemented at this stage of the research, so it is a weakness in this research. Further research needs to be carried out to test the effectiveness of the e-module in two different groups (control and treatment groups) so that the impact on the ability of postpartum mothers in breastfeeding skills, increasing maternal efficacy and the breastfeeding problems they face can be determined.

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