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## E-Book as Educational Media ‘*Aku dan Kehamilan Sehat-Ku*’: Narrative Review



Fatihah Handayani<sup>1</sup>, Anggie Yuliyati<sup>2</sup>, Cindi Zaenudin<sup>3</sup>, Syifa Azzahra<sup>4</sup>  
<sup>1,2,3,4</sup>Midwifery Department, ‘Aisyiyah Bandung University, Indonesia

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### Abstract

Technological developments have affected the method of providing education in every field. The development of health education media is very helpful in increasing understanding of healthy living, as the process of pregnancy is a natural process. Hormonal changes that cause various kinds of complaints or discomfort will affect the baby if it is not addressed properly. The purpose of this research was to examine the results of research on the use of digital books or electronic books (e-books) in providing information about discomfort in pregnancy. This research used Narrative Review method, namely examining research articles. The research articles were obtained using the e-book, pregnancy, discomfort keywords in pregnancy from the Google Scholar, PubMed, Scopus and Wos databases. There were 30 articles obtained with 19 articles that were in accordance with the research objectives. It can be concluded that there is a potential to develop e-book media that is modified with multimedia to be used as a media for health education about pregnancy and its discomfort.

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✉Correspondence Address:

‘Aisyiyah Bandung University – East Java, Indonesia

Email: [fatiah79@gmail.com](mailto:fatiah79@gmail.com)

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## INTRODUCTION

Today's global progress makes everyone get almost part of the access to information they need through the use of the internet and other technology applications, information and communications. The problems of globalization, economic growth, international competition, the cultural environment, health, politics and others are likely to be resolved by the use of ICT. Technology, information and communication (ICT), as conveyed by Rusman, et al. (2011) from the results of research (Sawitri et al., 2019), is the use of hardware and software, content, and computer and communication infrastructure in the interest of retrieval, collection, processing, storage, dissemination, and presentation of information.

Information technology is needed to manage information so that the information obtained can be searched easily and accurately, and can be called data when the information has been processed. The data or information obtained can be in the form of writing, voice, images, video and others, and in the same research from Sawitri E, et al. (2019), mentioned by Darmawan (2012), ICT is one of the important ingredients for building the development of modern society. (Sawitri et al., 2019).

The use of ICT in learning in education is currently experiencing rapid development. According to Munadi (2008) in research (Qudsyi, 2015) Muhammad, et al (2017), it was written that building a new education system requires physical and non-physical facilities and infrastructure, teaching human resources who have performance and skills as well as new attitudes and equipment with a more complete and more orderly administration (Muhammad et al., 2017). Based on the opinion in this research, ICT must be optimized to support education, for example the use of ICT in the form of a digital book or e-book, which is an electronic version of a text that can be read on the screen of a desktop or laptop, PDA or other portable devices or hardwires. E-books use a variety of file formats and incorporate other features such as annotations, audio and video and hyperlinks. To support interaction, e-books can also be equipped with comments and communication tools (chat) between readers, and allow readers to add links to outside sources (Muhammad et al., 2017).

Apart from the education sector, the health sector also needs to have human resources who

are educated, physically and psychologically healthy and not free from disabilities as the definition of health itself. Giving birth to a healthy generation starts with a partner, especially healthy pregnant women. Changes in the body's system caused by hormones have an impact on physical and psychological changes and ultimately often cause pregnancy complaints or discomfort. Knowledge, attitudes and positive behavior in undergoing pregnancy are needed by mothers and their partners so that the pregnancy runs smoothly and gives birth to a healthy generation.

The psychological changes that pregnant women may experience are fear and anxiety in facing childbirth, which can cause mental and physical tension so that muscles and joints become unnaturally stiff or mood disorders (Wulandari, 2006). The results of the study prove that there is a relationship between maternal physical and psychological readiness on fetal well-being (Rahmawati&Wulandari, 2019).

A pregnant woman needs adaptations related to changing roles and increasing more attention to prospective new members and ensuring that all are in good health, so that the main concern of a pregnant woman is how to undergo a pregnancy by seeking safe ways (Beldon& Crozier, 2005). Health workers have a role in providing education, but sometimes they are very busy so they do not have enough time to answer questions related to lifestyle and healthy behavior in pregnant women, including the lack of participation from partners during pregnancy examinations, which is an obstacle for pregnant women to adopt healthy habits (Kazemi et al., 2018).

Based on the above explanation, a pregnant woman needs access to information obtained other than during pregnancy visits to health services. The handbook for pregnant women when carrying out a pregnancy check is a book on Maternal and Child Health (KIA) from the government, which is equipped with identity and information starting from pregnancy, childbirth, postpartum period, use of family planning and baby care. According to the district's data, Banyumas found that MCH coverage was still below the target, namely 72.34% while the target was 100% (Sistentuki et al., 2014). The results of this research also stated that there was a relationship between the function of education and the completeness of filling out the MCH books. The

research showed that mothers with good knowledge completed the MCH handbook completely compared to mothers with low knowledge.

In order to achieve the government's target in Maternal and Child Health (MCH), it is necessary to integrate health services for pregnant women by utilizing the sophistication of ICT, one of which is by making e-books that are equipped with not only text and images, but multimedia such as audio, video and other devices facilitating two-way interaction. This statement will be formulated in a problem statement, namely how to use e-books in overcoming discomfort in pregnancy. The purpose of this research was to analyze the results of research relevant to the use of e-books to provide information about pregnancy and pregnancy's discomfort. The benefits obtained from the results of this research are the basis for further research development, so that it can become a policy of the government or other sectors to cooperate in making e-book products that can be widely utilized.

## LITERATURE REVIEW

### E-Book

Along with technological developments, book-making has been combined with electronic tools into a new form of technological development, namely e-books that emphasize interactivity and the integration of media content, namely the combination of text, graphics, animation, sound and video in one device. The use of digital learning resources is considered to be influenced by educators' perceptions of digital natives. Digital learning resources can be defined as anything in digital format that can be used by teachers and students for learning purposes. Digital books are flexible digital learning resources to facilitate student learning activities that can be accessed both classically and independently. The characteristics of the digital book are expected to be more engaging, inspiring, interesting, and interactive to be used in interactive learning multimedia development lectures with the availability of various types of media in one learning device. Digital technology is believed to be able to increase student retention and learning persistence (Information Resource Management Association, 2012) and can also provide rich content that is more suitable to be applied in the 21st century learning model (Maimunah & Arumi, 2019).

E-books have several advantages including that they do not require large space, can reduce the use of limited space due to their electronic or digital nature, are more flexible and functional, are more economical and efficient than printed books and are easy to be published. E-books can be used in all areas of daily life.

### Discomforts in Pregnancy

Pregnant women will experience many changes that will require them to be mentally and physically ready so that their pregnancy can grow healthy. The readiness that a pregnant woman has will affect her in having a comfortable pregnancy. Mothers who are ready for pregnancy will quickly make the decision to seek first aid by reaching health services when experiencing discomfort. The first time a pregnant woman's visit (K1) to a health service such as a Puskesmas is the right way when the mother experiences discomfort. Changes in the system in the mother's body during pregnancy require adaptation, both physical and psychological. It is not uncommon for mothers to experience discomfort in these changes, so it is necessary to provide prevention and treatment. The discomfort, if not addressed wisely, can trigger anxiety in pregnant women so concrete information is needed about how to deal with discomfort during the pregnancy period (Eniyati, 2017).

Discomforts in pregnancy, according to various references, are nausea, vomiting, constipation, hemorrhoid, heartburn, varicose veins, back pain, fatigue, swelling of the legs, leg cramps, itching, discharge from the vagina, usually vaginal discharge, and bleeding gums. This discomfort can be felt only in the 1st, 2nd or 3rd trimester.

### Use of E-Books as a medium for health education

Midwives are recognized as responsible and accountable professionals, who work as partners for women to provide support, care and advice during pregnancy. Care that includes prevention efforts, promotion of normal delivery, detection of complications in mothers and children, and access to medical assistance or other appropriate assistance, as well as carrying out emergency measures. Midwives have an important role in counseling and health education, not only for

women, but also for families and communities. One of the activities is covering antenatal education. (Rahmawati&Wulandari, 2019).

The use of e-books will solve the problem of information needs of pregnant women. Pregnant women who own smartphones can access information about their pregnancy anytime and anywhere with an attractive appearance so that it is expected to facilitate acceptance of information to be adopted into positive attitudes and behaviors..

## MATERIALS AND METHOD

This research used a narrative review method. According to Bernardo WM, et al cited by the research (Jahan et al., 2016), narrative review is a discussion of an important theoretical topic as an educational tool in medical education. The narrative

review approach was seen as more formal review approach compared to the systematic review method which requires more accuracy in several aspects needed such as research methods, databases, search terms, inclusion criteria and others.

This research was conducted from August to September 2020, with journal searches obtained through a database of national journal providers, namely Google Scholar and international journals from PubMed, Scopus and WoS. Based on the search results, there were 30 articles by searching words for pregnancy, pregnancy management, pregnancy discomfort, technology, information and communication, e-books.

## RESEARCH RESULT RESULT

Researcher	Title	Sample	Method	Output
Anwas OM. 2016	Model Buku Teks Pembelajaran Berbasis Teknologi Informasi dan Komunikasi	Analysis of relevant data, documents and literature concepts.	Literature Review	Utilization of the book model with Information and Communication Technology applications for students
Mark D Miller, et al. 2016	A-Multimedia E-Book : Story of Health, Filling a Gap in Enviromental Health Literacy	Research Article	Literature Review	Health workers had to play an important role in changing patient behavior patterns and influencing public policy
(Purwaning-tias & Solikin, 2017)	Penerapan Aplikasi e-book school pada SMK Emhata OKI Sumsel berbasis Web	Students of SMK Emhata Oki	System development using web engineering method	Improved learning outcomes by using multimedia-based e-books
Sella M, Ali Muhtadi. 2017	Pengembangan Digital Book Interaktif untuk Mahasiswa Teknologi Pendidikan	Six college students and 28 media and material experts	R&D Research	The alpha test showed that the digital book product was very suitable for field trials
Eniyati dkk. 2017	Sikap Ibu Hamil dalam Menghadapi Ketidaknyamanan Kehamilan Trimester I di Puskesmas Piyungan Bantul Yogyakarta	30 pregnant women	Quantitative descriptive with a cross sectional approach	56.7% of mothers had a positive attitude towards pregnancy discomfort and the rest 43.3% had a negative attitude

Nurly Meilinda, 2018.	Studi Peran Media Sosial sebagai Media Penyebaran Informasi Akademik pada Mahasiswa di Program Studi Ilmu Komunikasi FISIP Universitas Sriwijaya.	Students using social media as well as users of academic services	Quantitative Research	Students preferred to find information using social media rather than directly.
Ruddamanti, 2019.	Pemanfaatan Buku Digital Dalam Meningkatkan Minat Baca	Students of SMA Negeri 1 Teluk Gelam.	Quantitative Research	There were various types of e-book formats that can be used to develop the reader's knowledge about some of the benefits, advantages and disadvantages.
Fatoni, dkk. 2018	Pengembangan E- Book Interaktif Mata Pelajaran Teknologi Informasi dan Komunikasi (TIK) untuk SMK Kelas X	Three groups of respondents (1 group beta test and 2 groups of product trials)	Development Model	The mean results of media validation and material test validation results were very good
Abdul Wahid dan Wawan Kriswando, 2018.	Internalisa Nilai-Nilai Toleransi Intra Umat Beragama pada Penggunaan E-Book (Ensiklopedi Hukum Islam Kubuati) di Pesantren Mahasiswa Darul Ulum Al-Fadhal Mojosari Malang	Students of Darul Ulum Al-Fadhali Mojosari, Malang.	Training, counseling and evaluation as well as interviews	e-books were a choice of millennial <i>santri</i> (Students in Islamic boarding school) and e-books were considered very effective for internalizing the values of tolerance for differences in Islamic law
(Yikar & Nazik, 2018)	The Effect of Complaints during Pregnancy on Quality Life	Research Article	Literature Review	Women and families considered physical and psychological problems that occurred during pregnancy as real problems and were sometimes unable to distinguish between health and illness, whereas health workers considered that it is not severe condition
Anita F, et al. 2018	The Perspectives of Pregnant Women on Health Promoting Behaviours : An Integrative Systematic Review	Articles in Google scholar, Web of Science, PubMed, Scopus, Irandoc, SID, MAgiran, Iranmedex, Proquest	Systematic review	There were low and average numbers related to health behavior in pregnant women which can be caused by demographic characteristics, pregnancy and environmental factors.
Vega Ramadhani	Gambaran Kebiasaan Ibu Hamil Dalam Mengatasi	Patients who have their	Descriptive with a cross-sectional	The findings obtained were 60% of patient's knowledge

Putri, dkk. 2018	Ketidaknyamanan Selama Kehamilan Di Rsud. R. Syamsudin, SH	pregnancy checked at RSUD R. Syamsudin, S.H	approach to describe the habits of pregnant women in dealing with discomfort during pregnancy	was good and 40% of patient's knowledge was sufficient and 53.3% was positive in overcoming discomfort and 46.7% was still negative in overcoming discomfort
Baljeet Kaur, dkk 2018	A Descriptife Study to Access the Knowledge of Antenatal Mother Regarding the Self Management of Minor Ailiments During Pregnancy in Selected Hospital of Jalandhar, Punjab India	100 antenatal mothers who met the inclusion criteria	Descriptive and quantitative	Occupational socio-demographic variables had a significant effect on antenatal maternal knowledge. For this reason, pregnant women needed education about minor illnesses during pregnancy so they must prepare information booklets and distribute them.
(Muhammad et al., 2017)	Penggunaan Digital Book Berbasis Android Untuk Meningkatkan Motivasi dan Keterampilan Membaca pada Pelajaran Bahasa Arab	64 students of Grade X of SMA BIdayatul Faizin	Non equivalent control group pre test and post test design	There are differences in the improvement of reading skills between students who use digital books and students who apply printed books
Abd. Ghofur dan Evi Aulia Rachma, 2019.	Pemanfaatan Media Digital Terhadap Indeks Minat Baca Masyarakat Kabupaten Lamongan	Students aged over 16 years and the public citizen.	Descriptive survey with a quantitative approach	Interest in reading using electronic media by accessing the internet was found according to age, occupation and education
Rebecca et al. 2019	Feasibility and Acceptability of a Midwife-Led Health Education to Reduce Exposure to Biomass Smoke Among Pregnant Women in Uganda	12 midwives and 40 other health workers 244 girls	Mix Method	The health education was important for pregnant women. Programs provided by midwives were appropriate and acceptable. The implementation of these program potentially reduced exposure to cigarettes with great benefits for the mother, fetus and children throughout their life
Alfiah R dkk. 2019	Influence of Physical and Psychological of Pregnant Women Toward Health Satus of Mother and Baby	Accidental sampling	Analytical observations used a cross sectional design	The variables of Physical and psychological in mothers did not have a significant relationship with maternal health with p value 0.369 (p value > 0.05) and the variables of maternal physical and psychological readiness had a significant relationship to fetal welfare with p value 0.018 (p value < 0.05)
Sudeweli	Knowledge and Practices	Pregnant women (n =	descriptive study cross sectional	Knowledge was significantly associated with ethnicity,

Koonge Sashanika, dkk. 2020	Regarding Self-Management of Minor Aliments among Pregnant Mothers	238) who attended the antenatal clinic (ANC), Regional Health Department, Batticakia.	questionnaire by examiners who have been tested and validated	religion, monthly opinion, educational level and participant's participation.
Hanan Elzeblawy Hassan, dkk. 2020	Impact of Tailored Educational Program on Primigravida Anxiety and Knowledge Regarding Minor Discomforts in Upper Egypt.	Samples of 50 primigravida pregnant women who experienced mild pregnancy problems at the autenatal clinic hospital. in Beni City, Suf.	The quasi-experimental design begins with a questionnaire through which the researcher conducts interviews with the development of the questionnaire.	It is demonstrated that providing educational sessions to primigravidas significantly reduced the scale of anxiety-related post-intervention pregnancy discomfort.
Meti Fatimah, dkk. 2020	Pendidikan Kesehatan Ibu Hamil Tentang Ketidaknyamanan Pada Kehamilan Trimester I dan Pelaksanaanya	Pregnant women in the first trimester (20 people) in the work area of the Karanganyar Community Health Center, Tasikmalaya City.	Observation and socialization with the question and answer method	Media information was needed by pregnant women to be able to increase knowledge so the anxiety in pregnancy can be reduced.

## DISCUSSION

Pregnancy as a natural process for women sometimes causes problems physically, psychologically and even spiritually for pregnant women. Discomfort caused by hormonal changes can sometimes be a burden for the mother and family. Lack of knowledge about changes in pregnancy and the discomfort it causes can affect the baby being born. As the results of research from Yikar, et al (2018), that physical and psychological problems during pregnancy are considered by families to be real problems and cannot distinguish between signs of danger or signs that are

physiological or normal, while the view of health workers is something that is not serious, so that Continuous assessment of pregnant women is needed to maintain well-being during the pregnancy period.

### Research results on the Creativity Program

This student (PKM) showed several relevant research articles about the knowledge, attitudes or responses of pregnant women and their families in dealing with pregnancy discomforts. The level of knowledge of pregnant women were significantly related to ethnicity, religion, monthly income,

education level and participant participation (Samara et al., 2020)

Other research on the relationship of knowledge and attitudes in pregnancy are written in the study (Fitriani et al., 2019), the first pregnant woman who had good knowledge experienced mild anxiety and knew that her pregnancy is a gift, she carried out regular pregnancy checks to keep healthy and avoid complications. Furthermore, pregnant women with first pregnancies who had a history of severe anxiety and good knowledge and checked their pregnancy regularly still felt anxiety because they have never seen their family and friends experiencing the same thing with them.

Various studies that convey the knowledge, attitudes and behavior of pregnant women in dealing with pregnancy discomforts are diverse. Providing information is the most basic solution to change someone's knowledge. The media as a means of providing information has been transformed into various forms as a result of the rapid development of technology. This development must be responded positively by all parties, both government and private and society in general so that they are not left behind with other nations.

E books are electronic books that can be used as a learning media. Digital books will be easily accessible compared to printed books and are widely available today. The high use of gadgets in the community can be used as a learning media in certain conditions because access to printed books or their utilization is not optimal.

Purwaningtias, et al (2017) said that the use of modified e-books with multimedia can improve the learning outcomes of vocational students. Alpha and beta tests in development research conducted by (Mawarni&Muhtadi, 2017) showed that digital book products are very feasible for field trials. The strengthening of the theory was obtained from the research of Muhammad, et al. (2017) with the results of the difference in increasing reading skills between students who use digital books and students who apply printed books..

The positive impact of using e-books in increasing knowledge in learning can be applied to health education media in pregnancy. Demographic, geographic and factors such as education level, age, occupation which sometimes become obstacles to access health services can be reached by using digital media. As the results of Fatimah's research (2020), pregnant women need to be given an

education in using media to reduce anxiety. Digital books about pregnancy are widely available on the internet, but the author has not found digital books equipped with multimedia, so that this research can be a theoretical support for further research development.

## CONCLUSIONS

Based on the results of the research, it can be concluded that the use of e-books as a medium for pregnancy education could be developed by multimedia that was more interactive and interesting to be read so that pregnant women could understand well and behave positively in facing their pregnancy. However, access to technology was sometimes constrained by several conditions so that not all pregnant women could access these conveniences. Therefore, the role of health workers in accompanying pregnant women until delivery and the postpartum period remained important.

## SUGGESTIONS

Contains suggestions from research results are in narrative form, not detailed in points that refer to the research's objectives.

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