

# WEB-BASED EXCLUSIVE BREASTFEEDING EDUCATION APPLICATION FOR PREGNANT WOMEN

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## ABSTRACT

**Background:** Pregnant women are a vulnerable group during the Covid-19 pandemic. Pregnant women need to do self-limiting from the outside environment or with social distancing which has proven benefits in reducing the transmission of Covid-19. Education for pregnant women is needed to prepare them as mothers so they can take good care of their babies and themselves, including exclusive breastfeeding. Education is important in improving behavior to get optimal health. Education through the web is an alternative for pregnant women during the Covid-19 pandemic. This study aims to create educational media about web-based exclusive breastfeeding for pregnant women.

**Method:** This research is a research and development (R&D) study. The research was carried out at the Annisa Mother and Child Hospital Jambi from September to November 2021 with a sample of 16 pregnant women. The developed website is [www.edukasibunda.com](http://www.edukasibunda.com).

**Result:** Based on the results of the assessment of 16 pregnant women, the average usability score was 70, which means that it is acceptable and suitable for use. Respondents who took part in this study were 16 people, most of the research respondents were aged 21-35 years (75%), most of them had high school education (68.75%), and housewives (81.25%).

**Conclusion:** The results of the assessment show that the website [www.edukasibunda.com](http://www.edukasibunda.com) is feasible and acceptable as an alternative to exclusive breastfeeding education for pregnant women during the Covid-19 pandemic.

**Keywords:** Education, Exclusive Breastfeeding, Covid-19, Web

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## INTRODUCTION

Presidential Decree (Kepres) No. 11 of 2020 stipulates a Public Health Emergency of Corona Virus Disease 2019 (COVID-19). Based on the Presidential Decree, the president designated Covid-19 as a type of disease that causes a Public Health Emergency (KKM) in Indonesia and it is mandatory for countermeasures to be implemented in accordance with applicable laws.<sup>1</sup>

Pradana in his research stated that one of the vulnerable groups during the Covid-19 pandemic was pregnant women. It is proven that disease transmission can be suppressed with social distancing policies. Among them when carrying out antenatal care to the obstetric clinic or to the hospital. Based on this, pregnant women must increase their vigilance by continuing to discipline themselves in using Personal Protective Equipment (PPE).

Examinations to obstetric clinics or hospitals can be minimized by conducting online health consultations, diligently checking their own health, as well as the signs and dangers of pregnancy, and the mother making visits to health services when worrying things are found.<sup>2</sup>

Prevention and control of Covid-19 infection is carried out by the Indonesian government as well as other countries. Vulnerable groups that are at greater risk are the main concern and one of the main concerns is the pregnant women group.<sup>3</sup>

Limiting the prevention of exposure to Covid-19 for staff and patients in providing access to prenatal health services is a challenge in itself.<sup>4</sup>

Pregnant women still have to do antenatal checks even during the Covid-19 pandemic. These efforts include reducing and preventing mental health problems. Several attempts were made to minimize transmission of the virus. The method is carried out by developing innovative but also safe ways to provide the support and care needed by patients during a pandemic.<sup>5</sup>

Health education is part of efforts to improve behavior to achieve optimal health.<sup>6</sup> Mulyani's research<sup>7</sup> concluded that health education using the lecture method and Whatsapp reminder was effective as an effort to provide exclusive breastfeeding. The direct lecture method during a pandemic is not possible. Health education through the whatsapp group has a drawback, namely the material will be

overwritten by subsequent conversations. In accordance with technological developments, nowadays the use of computers is wider than just typewriters or calculating devices. Decision making quickly and accurately can be done with the help of computers that are useful for processing knowledge.<sup>8</sup>

Pregnancy is a process of union or fertilization of spermatozoa and ovum which is then nidated or implanted. The normal gestation period lasts about 40 weeks/10 lunar months or 9 months according to the international calendar, if you count the start of fertilization until the birth of the baby. The gestation period is divided into 3 trimesters, the first trimester lasts 12 weeks, the second trimester lasts 15 weeks, namely 13 to 27 weeks, and the third trimester lasts 13 weeks, namely between 28 and 40 weeks.<sup>9</sup>

The process of pregnancy is a chain that is interrelated and consists of: ovulation, release of the ovum, transfer of spermatozoa and ovum, then conception and fertilization of the zygote occurs, nidation (implantation) occurs in the uterus, then the products of conception grow and develop until term.<sup>10</sup>

Exclusive Mother's Milk is the process of giving breast milk for at least 6 months and without giving other additional food or water. Breastfeeding behavior is the baby is given milk directly from the mother's breast with attachment process (skin to skin).<sup>11</sup>

The benefits of exclusive breastfeeding for babies meet all nutritional needs. Breast milk is the best food whose composition is according to the baby's needs. Exclusive breastfeeding has benefits in terms of increasing beneficial weight, BMI and adiposity, total cholesterol values, cognitive and behavioral development, and reducing the length of stay in the hospital after delivery. Breastfeeding is also related to the relationship between mother and baby. The mother's attachment and sensitivity to the baby will be affected when the mother breastfeeds her baby.<sup>12</sup>

Web Based Application Is a program that is ready to use, can be used to execute commands from the user, which aims to get more accurate results according to the purpose of making the application. Problem solving uses one of the application data processing techniques that usually races a desired computation. In general, an application is defined as an applied tool that functions specifically and is integrated according to its capabilities. The application is a computer device that is ready to use for the user.<sup>13</sup>

## **METHODS**

This research is a research and development (R&D) study. The research was carried out from August to November

2021 at RSIA Annisa Jambi with a sample of 16 pregnant women who had previously given informed consent. Participants who were included in this study were pregnant women in their third trimester, had a computer/ laptop/android, could read and were willing to be respondents. Licensing and coordination with elements of the hospital leadership, obstetric gynecology doctors and the team involved were carried out before and during the study.

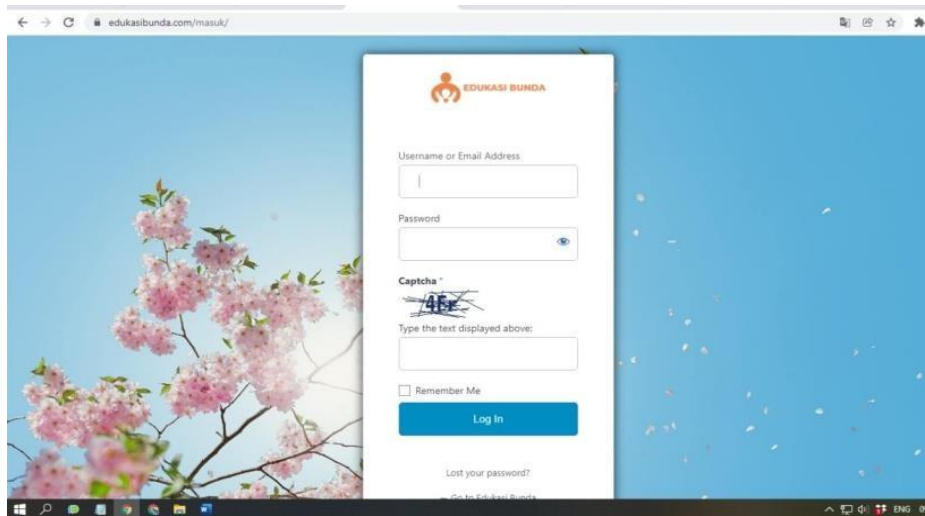
## **RESULTS AND DISCUSSION**

### **Design Stages**

This website uses the php programming language, mysql database, CMS WORDPRESS. Runs on a server using Linux operating system, with Plesk panel., Hardware used: CPU Intel ® Xeon ® CPU E5- 2620, V2@2.10 GHz, Storage media: Solid State Drive (SSD) with 600GB capacity, 32 GB RAM. Website name [www.edukasibunda.com](http://www.edukasibunda.com).

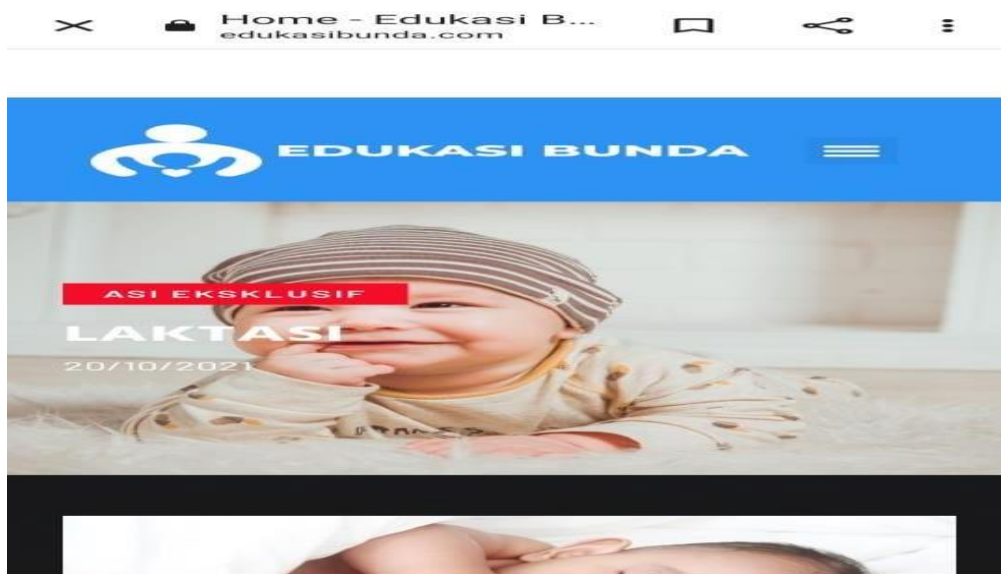
Educational materials on the web consist of Mother's Milk, exclusive breastfeeding, factors that influence exclusive breastfeeding, lactation, matters that need to be considered in lactation practices, breastfeeding positions, Types of Breast Milk based on production time, Breastfeeding Techniques, Early Breastfeeding Initiation.

### Media View



**Figure 1. Login Page**

Remarks: Login only for admin: <https://www.edukasibunda.com/enter/>



**Figure 2. Home page**

The image above is a display of the front page of the web



Figure 3. Web Owner Information



Figure 4. Sample Material

### Characteristics of Respondents

Characteristics of respondents in this study based on age, level of education, and work. Based on the table above, it is known that most of the respondents are

aged 21-35 years (75%). the most education is senior high school (68.75%). And most of the respondents work as housewives (81.25%).

**Table 1. Distribution of Respondent Characteristics**

<b>Characteristics</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Age</b>		
< 20 Years	0	0
21-35 Years	12	75
> 35 Years	4	25
<b>Education</b>		
junior high school	0	0
high school	11	68.75
Bachelor	5	31.25
<b>Work</b>		
IRT	13	81.25
Private employees	2	12.5
civil servant	1	6.25

**Web Assessment by Respondents**

Web assessment uses 10 statements from Bangor (2009) with a

Likert scale of 1 (strongly disagree), 2 (disagree), 3 (undecided), 4 (strongly disagree), and 5 (strongly agree).

**Table 2. Web Rating Score Results by Respondents**

<b>Respondents</b>	<b>Number of Scores</b>	<b>Value Score System Usability Scale</b>
1	38	95
2	35	88
3	39	98
4	34	85
5	33	83
6	33	83
7	35	88
8	34	85
9	34	85
10	35	88
11	33	83
12	36	90
13	36	90
14	36	90
15	36	90
16	36	90
<i>Average value</i>		70

Based on the table results, the average value is 70, this means that the usability above is acceptable or feasible. Delivery of education in the health sector can be done with technology. Currently, web-based education is one of the methods being developed as an

educational medium. Information via the internet is needed by patients, especially those who are still unsure about asking directly about their condition.<sup>14</sup>

The use of online media as an educational medium is beneficial because it can present information more quickly.

Online media is also more flexible because it can be accessed at any time and place. Online media users can increase their knowledge and get information according to their needs. Currently, the development of online media continues to increase.<sup>15</sup>

The rapid development of online media requires evaluation for quality. Usability is the degree of an application's ability to help users complete tasks.

Usability of applications that can be used to make life easier for users.<sup>16</sup>

Bangor 18 interprets the SUS value into an objective rating which clarifies the level of usability of a system which is then translated into the level of acceptance of a system (acceptability range) which determines whether the system can be accepted or not accepted by its users as below.<sup>17</sup>

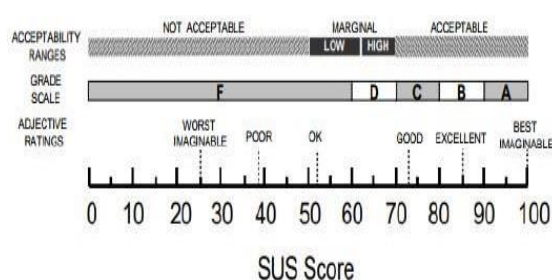


Figure 5. SUS Score

## CONCLUSION

Based on the assessment of the respondents, web-based educational media [www.edukasibunda.com](http://www.edukasibunda.com) shows fit for use. The material on the website is related to breastfeeding, with the hope of

facilitating increasing the knowledge of pregnant women and their families regarding breastfeeding, which is then expected to increase the success of exclusive breastfeeding.

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