

# Health Communication through Online Media: The Using of Pregnancy Applications as Alternative Health Resources for the Millennial Mother in Indonesia

Syifa Astasia Utari<sup>1</sup>, Winda Dwi Astuti Zebua<sup>2</sup>  
{syifa.astasia@umj.ac.id<sup>1</sup>, winda.dwiaz@gmail.com<sup>2</sup>}

Universitas Muhammadiyah Jakarta, Indonesia<sup>1,2</sup>

**Abstract.** One of the red reports in Indonesia is the high mortality of mothers associated with the process of pregnancy, childbirth, and handling. The condition will be different if people's knowledge about health and pregnancy can be improved, so they are able to perform early detection in a simple way after obtaining essential information that is easily accessible before finally handled by the party Medical. Now, the power of communication and information devices can also be used by various circles at a relative affordable cost. Including millennial mothers, also those working mothers and who reside far from the city who often constrained by distance and time to have their pregnancy checked directly to the doctor. Starting from the phenomenon, there are various digital online applications that provide features around health and pregnancy complete with detailed descriptions and interesting visualizations such as The Asian parents, Pregnancy +, Teman Bumil, Halo Bumil, and others. Besides profitable business, the goals of these digital applications are to suppress maternal mortality by raising their awareness to always pay attention to their health condition through the information obtained from the application during pregnancy until post-childbirth. This research explains the phenomenon of the use of pregnancy applications experienced by mothers in Indonesia, how their motives and experiences during the use of health application.

**Keywords:** Health communication, Internet, Millennial mother, Pregnancy digital application.

## 1 Introduction

One of the problems with high urgency that has become government's concern in recent decades is related to the quality of health, in addition to other infrastructure problems such as education, poverty, and others. On the other hand, the health ministry has set five strategic issues that are a priority in the health development of the next five years (2020-2025), i.e. maternal mortality or Neonatal mortality rate, stunting, tuberculosis, non transmitted diseases, and complete basic immunization coverage. The development of health itself is an effort of the society in raising awareness, willingness, and healthy living ability for everyone to increase the degree of public health socially and economically.

Based on the demographic survey and health data of mothers which published by the Ministry of Health stated that the mortality rate of mothers in Indonesia is still relatively high among ASEAN countries.



Source: *Kemendes RI*.

The high number of the death caused by various factors such as bleeding, hypertension, and other things that determine is lack of knowledge of good lifestyle to support the health and development of the fetus, in order to avoid risks and complications that may occur during pregnancy to post-childbirth. Seeing the health problems, the government and the community should be worked together and took the responsibility to ensure every mother on getting their right to access quality healthcare. Ranging from access to information, health care services, and health care personnel needed during each phase of pregnancy, up to the needs of postnatal health care for mothers and infants.

On the other hand, the rapid development of technology in the digital age is now possible for anyone to contribute in tackling the various problems that exist in the Indonesian. Various innovations were created to facilitate the community in obtaining facilities according to the needs of their life. In Fact, some of the parties managed to create a health application that slowly began to be widely known by the community as pregnancy digital application. It is a real fact that many parties who want to contribute actively to reduce the burden of the Government in improving the quality of life of society, especially those related with health problems.

Applications like this are considered to be a companion app for mothers-to-be to continue on getting information that easily understood and practiced in everyday life. So that they can supervise the development of self-health and their babies independently besides conducting regular checks with the medical personnel in their chosen provider. This can be one of the alternative solutions for mothers who have the limitation to have a direct and periodic doctor visits, which probably can be caused by various factors such as the time for working mothers, the distance for they are whose living in hard geographical areas, or even family background

factors (education, economics, etc.) that lead to their limited access to this highly essential healthcare information and services.

There are several pregnancy applications that are quite popular in Indonesia, both local and foreign-based applications such as Teman Bumil, Halo Bumil, Pregnancy +, The Asian Parents, Baby Bump, I'm Expecting, and others. This application is considered able to facilitate the mothers to get information quickly and adapted to the various health conditions. Of course, it is aligned with the initial purpose of creating the application itself, which is to accompany and disseminate information to educate and improve the public awareness of health. In addition, this pregnancy application also has a variety of features that have been adapted to different needs and conditions for its users, such as to know the age of pregnancy, the development of fetal form, tips about the good lifestyle for fetal growth, what to do and don't during the pregnancy, and other important things including the arrangement of the consultation schedule with the doctor of choice, even a virtual general consultation with the obstetrician for free.

Referring to the ease offered by the various applications of the pregnancy, at this time there should be no more reason for the mothers especially those who live in the millennial cohort to not gaining access for any information. As long as they willing to empower themselves and take the advantage of existing technologies. This means that regardless of the conditions, mothers who are always around smart phones and internet networks should be able to monitor their own health no matter how busy or how far they are from medical services.

Ironically, the available technologies at this time are still not utilized optimally by mothers. There are still many people out there who are reluctant to open themselves to innovations that have basically been deliberately designed and adapted to the characteristics, habits, and lifestyles of the Indonesian people to facilitate the fulfillments of their needs about health information. It is certainly a challenging homework for the government, service providers, and community groups who want to joint to find a solution to improve the quality of life of Indonesian people who are still vulnerable.

Through this study, researchers sought to explore the experiences of mothers on the process of utilization of pregnancy applications and the reasons why they choose to use or refuse pregnancy applications that accessible to anyone and anywhere else.

## **1.1 Research Issues**

The distribution related to information and communication technology, especially the Internet network in Indonesia has been conducted in recent years. People from all walks of life have begun to enjoy the benefits of these technologies especially those who are in the millennial cohort whose lives are not detached from the use of smartphones and the Internet. If used effectively and wisely, the existence of the Internet and other technologies will be able to penetrate the geographical boundaries that have been a constraint for Indonesian society to gain various access. For example, access to health, education, employment opportunities, etc. That related to the welfare level of their lives.

Unfortunately, the ease of facilities offered by the government has not been well utilized by the people of Indonesia. Although access is easy and inexpensive, its use is still not optimal and is only used by a handful of groups. The biggest obstacle is that there are still many mothers who are not technology literate, this shows that the literacy of the internet is uneven, it indicates that the literacy against the internet is not evenly so it impacts on the limited access them against applications that can only be used with Internet support. In fact, there are mothers who are already tech-literate but still close-minded to the development of existing

innovations so as to refuse to use the latest applications that are actually able to provide the information about Pregnancy that they need.

The existence of this application is basically an effort to provide comfort to the community, especially millennial mothers to realize how important it is to get information about the health of their pregnancy. However, fortunately enough millennial mothers use pregnancy applications as a companion to their pregnancy, which is considered as an alternative solution to get the information they need about pregnancy and fetal development. The diverse experiences of individuals regarding the use of pregnancy applications are expected to be used as reference material for other pregnant women in making the decision to use a similar application.

## **1.2 Research Objectives**

- a) To know the motive of pregnant woman on using the pregnancy application in Indonesia
- b) To know the positive experience of pregnant women on using pregnancy applications in Indonesia
- c) To know the negative experience of pregnant women on using pregnancy applications in Indonesia.

## **2 Literature Review**

### **2.1 Health Communication**

Health communication is a part of human communication with a primary focus on how an individual overcomes a variety of health-related things including how the efforts are made to maintain their health. Healthcare communication utilizes communication services to positively influence the health behaviors of both individuals, families, and community communities. Health communications include information on disease prevention, health promotion, health care policies as well as raising individual awareness of health issues, health risks as well as health solutions. Advocacy media, mass media, entertainment media, and the Internet is a form of health communication with the aim of improving and maintaining the public health.

### **2.2 Pregnancy Application**

The sophistication of today's technology is capable of fulfilling human needs in various aspects, one of which is the need for information. As long as the public is connected on the Internet, there are certainly no more limitations to information. It means that we can easily get through the Internet, applications in smartphones. This means that the application on the smartphone can be used as an alternative to obtain information other than the medical authorities directly.

With the presence of useful applications, it will be very helpful for mothers especially for mothers in the millennial era to obtain the necessary information, including information about their pregnancy progression just by using a smartphone only. Here are some examples of the appearance of pregnancy applications that are quite widely used in Indonesia:

a) Preanancy

Available for iPhone, iPad, Android and Windows

Your favourite pregnancy App on any device



From several pregnancy applications, pregnancy + is one of the most downloaded pregnancy applications. The app can be downloaded for free on Android and iOS, designed specifically to know the condition of the fetus, fetal movement, fetal size, maternal weight development, to the idea of baby names.

b) Teman Bumil

Teman Bumil app is also very suitable for download by pregnant mothers. Features include, Checklist (a list of what you have to do or do during pregnancy), then there is an Agenda (personal assistant that will send reminders for expectant mothers), and fetus 360 (the feature will be Tell the pregnant woman how the fetal development is in her womb). Furthermore, there is also a Record Mum & the fetus, to record the fetus's weight and length data, as well as his heartbeat, so that we can see the graph of fetal development. In addition, we can also monitor our own health every month, by entering blood pressure and gaining weight during pregnancy.

The above applications are some examples of the appearance of pregnancy applications that are often used in Indonesia. However, please note that these applications are limited to alternative and reference information about health and pregnancy, and are not intended to replace the advice of a trained medical physician. Application providers give a statement that they are not responsible for the decisions that users make based on the information contained in the application. Because the information provided to the user is only general information and not as a substitute for medical advice made according to specific needs.

c) The Asian Parent

Currently the Asian Parent Indonesia has had 15 million readers, 30 million page views, 3 million fans on Facebook and 200 thousand newsletter subscribers. The number is claimed to be quite fantastic by the Asian Parent Indonesia which has been running a business for one year. Media devoted to young mothers in Asia, The Asian Parent inaugurated its presence in Indonesia. Asian Parent is a very helpful pregnant woman application where this application

brings some interesting tools/features that are very useful to know the pregnancy. Some of the features in this application are pregnancy calculator, Live Chat with all users, nutrition of pregnant mothers and the absence of interesting gifts. This exciting gift feature can be exchanged with some interesting prizes for the baby by filling out the surveys.



### 3 Research Methods

This research seeks to know the motive and experience of the pregnant women of millennials in Indonesia using the digital pregnancy application. The chosen approach is a qualitative approach with the phenomenology study. The choice of informant with purposive sampling technique, chosen informant based on the consideration determined by the researcher. To get a complete and comprehensive picture, this study uses data taken with a descriptive format through an interview process that explores deeply the subject experience of research related to the use of pregnancy applications.

In line with the characteristics of phenomenology, the selection of small and homogeneous samples is expected to provide in-depth information regarding the experience of mothers of millennials when using pregnancy applications. This approach is done so that researchers can describe specific subgroups in-depth [1]. For secondary data, researchers will review the literature, visitation of each digital application, as well as view the health documents issued by the government.

Patton [1], the unit of analysis is a unit that will be examined can be individuals, organizations or other parties who respond to the treatment or actions that researchers do in

their research. Based on the explanation, the analysis unit of this study is digital pregnancy application user with certain criteria, such as mother who belongs to the millennial generation, frequency the respondent accesses the application, kind of the application used, and more. The response unit itself is a research unit that is a source of data and can help researchers answer research questions. Based on research objectives, the response unit of this research is the motives and experiences of mothers in using digital pregnancy application. While the data analysis techniques in this research is done by the data reduction, understanding and interpretation of results in phenomenology technique [2].

#### **4 Results and Discussion**

Based on the results of interviews on the subject of the study, the experience analyzed was the experience of mothers of millennials who chose certain pregnancy applications to obtain information about their pregnancy conditions. Most of the informant says that they tend to use pregnancy applications in the first pregnancy compared to subsequent pregnancies. This does not mean that they are not enthusiastic in the second and subsequent pregnancies, but it is only curious and concerned about higher pregnancy conditions when they first experience the pregnancy. The following narrative related to the tendency to use pregnancy application in the first pregnancy:

“Yes, I use the application, to study, so I know what fetal development should be like, every week, how big is it, what is right and not good to eat, anyway I want to know what is right for fetal development, especially when pregnant with the first child. Wow, when I knew I was pregnant, I immediately downloaded several pregnancy applications”. (D)

The use of digital pregnancy applications is considered sufficiently capable to reduce the anxiety that is sometimes experienced by mothers because they feel overwhelmed with many things like adequate lack of knowledge, guidance, and reference. Steven Schwartz [3] states “anxiety is a negative emotional state marked by foreboding and somatic signs of tension, such as racing heart, sweating, and often, difficulty breathing, (anxiety comes from the Latin word “anxius”, which means constriction or strangulation). Anxiety is similar to fear but with a less specific focus. Whereas fear is usually a response to some immediate threat, anxiety is characterized by apprehension about unpredictable dangers that lie in the future”. By using that application, they can even monitor and match between their pregnancy conditions with information on each phase of the pregnancy that the application displays. It is also the main motive for mothers to use pregnancy applications is to obtain accurate and reliable alternative information about all matters relating to pregnancy conditions in addition to consulting directly with the doctor or other medical personnel.

“Yes, we always consult directly with the doctor, but usually once a month, now by using this application, we feel that we are being accompanied every day. So, if you are asked the reason why you use the form, yes, for additional information, but now the information is easy to stay confused, but we don't know which ones are valid or not. If the information is from a transparent and trusted application, we can be calm too”. (T)

Another reason for the use of digital pregnancy health applications is the need for mothers to be accompanied during the pregnancy. So they feel not alone and there are accompanying for various things, such as reminding the schedule to the doctor, reminding to monitor the health of self and fetus, and so on although only by an application.

“So for the reminder, we know that at this age what should be felt by the mother, when the baby should have started kicking if you can't ask the doctor later, we become aware of the conditions in each phase because there are references other than doctors, now if there is which is not by the theory should only consult a doctor”. (E)

When motive concept was associated with the above exposure, there are two phases proposed by Schutz relating to the actions that make up the motive, i.e. the action in-order-to motive (Um-zu-Motiv), which refers to the future; And the Because-motive (Weil-Motiv) action that refers to the past [4]. In this case, the motive "for" in the use of pregnancy health application is to get health information about pregnancy. While the motive "because" in this case is because the awareness about health began to increase so their needs of information are increase, and the users cannot go to the doctor every day so they use the application to get information quickly and whenever they need.

Some informants claim to know the existence of digital pregnancy applications after exposed to media that shows the application advertisement. Media exposure is the intensity of the circumstances in which the audience is exposed or exposed by messages transmitted through a medium [5]. For example, from advertisements installed on newspapers, radios, and some social media platforms such as Instagram and Facebook. While others say that they know the application of pregnancy from information submitted by friends or relatives who recommend certain applications that they have used themselves. As for the decision to choose which applications to use, in addition to a relative recommendation, the informant recognizes that they are choosing based on the highest rated application and the most attractive display of the application that is usually on top of digital content services like Appstore or PlayStore.

Each informant will have a variety of experiences both positive and negative, including communication experience when using the application of pregnancy health. In most health and pregnancy applications, there are discussions with other young pregnant mothers to exchange information about the experiences or problems surrounding the pregnancy they are facing. Some applications also allow users to communicate with a physician who works with the application provider, meaning that in addition to getting information from the standard features of the application, users can also perform two-way communication with expectant mothers or other users willing to share their experiences or simply respond to other users' questions. Here are the informant's statements:

“It's fascinating, so usually, the application gives tips about pregnancy, like what foods can be consumed or avoided, and so on. But the good thing is that we can also share with other users, for example, if someone has experienced nausea until you can't eat and drink, then others will respond by giving advice based on their own experiences, so they exchange information.”

About the experience of using the application, in general, the informant said it has gained positive experience when using health applications and pregnancy. They feel much helped with the existence of applications especially to provide information and reference related to



pregnancy conditions. For example, a mother or a user can figure out what size the fetus is in their womb based on the age that illustrated by the application. Users also get a range of easy and applicative tips to help them deal with each phase of their pregnancy.

“Yes, it feels beneficial for us to be helpful, it could be for reminders like that, we come to know at this age what mothers should feel when the baby should start kicking if we can't ask the doctor later, we will become aware of the conditions in each phase the problem is there are references other than doctors, well if there are, which are considered not by the theory should only consult a doctor”.

For negative experience, almost all informants in this study have not experienced hard negative experience during using the digital pregnancy application, some obstacles only related to language understanding or terms used by the application. Therefore, when they choose an application and find it difficult to understand the application (the display of features, languages, or terms used by the application), then they will look for other applications that are easier to understand as a substitute.

Judging from the communication side, in the process of using the application there is a process of health communication that runs when the user chooses to use a particular pregnancy health application. Health communication is part of a communication that focuses on how an individual in a group/community faces health-related issues and seeks to preserve their health [6]. The ultimate objective is to create a positive change in health behavior in order to improve the health of the public by using various methods of communication. In this case, the communication method used in delivering health messages by the provider through their digital application services that can be accessed using smartphone devices and the Internet.

The health communication outlines include information on disease prevention, health promotion, health care policy, business regulation in health that is as far as possible change and update the quality of individuals in the community by taking into consideration the aspects of science and ethics. The digital Pregnancy application is a form of health promotion that intersection between profitable business and health issues solving. These applications are designed to make improvements in the behavior of people to pay more attention to their health condition through various alternatives other than visiting the doctor directly. It can be said that the existence of this application is a manifestation of health promotion strategy in Indonesia. According to Mubarak and Chayatin [7], strategies are needed in realizing health promotion and are reflected in three steps, advocacy, social support, and community empowerment. Today the community is already more open and aware of the importance of knowledge on health issues. So there is an increase in demand to obtain quality health information.

The informant states that they also enjoy the health communication process that occurs during the use of the application. This means they get a positive communication experience when exchanging experiences and opinions with other users in the app's features. They also have the opportunity to consult with experts for free as long as the case discussed is still general and not medical action. In addition, Informant says that they find it easier to understand the health messages listed in the application because almost all healthcare digital providers today have made every effort to always use the language and simple terms that will be easily understood by users from various circles. The familiar, fun and interactive use of everyday language in the application makes users more comfortable in using pregnancy applications so that their level of enthusiasm is to access health information and learn it into Higher.

A negative communication only experienced by a handful of people, it is only when they use the discussion feature when interacting with other users in the forums then sometimes there is a little debate and one of the parties. Feel a little offended by the other user's words that seem to be judging or comparing with their pregnancy conditions. Or when they do not understand or misunderstand the intent of the messages listed in the application because the language of instruction used not all of them are presented in *bahasa*.

## 5 Conclusion

Health communication can be done through various means and media. Including accessible digital media on the internet that able to provide a variety of pregnancy information through applications that are intentionally created as a source of relevant alternative information accompanying the medical personnel. The existence of these applications is a form of health promotion that occurs in Indonesia as part of the intersection between profitable business as well as an increase in the degree of quality of life of society. Based on the results, the experience of the use of digital pregnancy application is quite varied, but the existence of this application is considered to be able to change the behavior of people who originally apathy to their health conditions become more conscious about the importance of health pieces of information. Most informants say it will recommend to other mothers to use the application whose benefits are very helpful to them. It is hoped that the results of this study can be an adequate reference so that readers are willing to open themselves to literate communication technology and take advantage of it to support their health.

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