Community Perspectives about Reproductive Health and JAKPROS Smart Mobile Application

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Abstract. In this day, mobile application is being used as an information source. People easily searches for any information, especially regarding reproductive health. Unfortunately, validation of information on the internet still doubtful. We knew that knowledge plays an important role in improving the personal quality of reproductive health. Our study was to analyze and explain community perspective about reproductive health and their opinion after used Jakpros application for daily basis. The sample conducted of 16 subjects from two sub-district general hospital in Jakarta. The subject consisted of women in reproductive age. In this study, we used descriptive analytics and qualitative method. Data were collected by direct observation in small focus group discussion. Participants admitted after they used Jakpros application feature, they were more aware of their reproductive health. Jakpros provides convenience in accessing information and knowledge in valid way.

Keywords: Jakarta Reproduksi Sehat, Jakpros, Mobile Application, Reproductive Health, Social Media

1. Introduction
Reproductive health is an important part of general health. The status of reproductive health is related to human development and become a serious concern for every woman. Mortality and morbidity in the country are focused on the success rate of reproductive health. Furthermore, knowledge plays an important role for key factor of women to be aware of her reproduction health status. Knowledge makes people know what steps they should take for seeking health services [1]. In this day, mobile health application is growing up faster and has been used widely to get information for health purposes by almost people in the world [2]. The fact in 2018 is more than 50% of people had one mobile health application on their gadget [3]. For today, we could find more than 100,000 health application in our smartphone. The main goal of internet-basis health application is for making it more accessible [4]. Currently, mobile health application has several benefits for everyone. People...
could search and get unlimited health information easily and quickly [2]. Mobile health application eliminates directly the gap distance between doctors and patients. Information about health in mobile health application is more approachable for people in every moment at any time [5]. In this era, it became popular because of several things that we have to know. Firstly, people are more comfortable to share their experience, expressing emotions, and exchange idea in a community with specific topic that they are interested. Secondly, people are curious and want to get more knowledge about their symptoms [6]. Mobile health application has been successful to reduce health costs. Preventive action by internet is much more efficient than manual methods such as brochures, leaflet or poster. In the next day, technology will solve the time management problem (e.g. counseling, waiting for treatment, and registration) [7].

Besides the advantages, mobile health application has a limitation. We have to concern about quality and accuracy of health information in it. We knew that internet is unlimited and could access by anyone who does not have credibility. The validation and credibility of individuals to provide information are important to lead right information for the patient. Furthermore, the main goals in the next day are to provide good quality health information [6].

Due to the increasing a popularity of mobile health application. We developed Jakpros smart mobile application in 2018. This application is specifically made for women to provide convenience in reproductive health knowledge. Jakpros application has a question and answer service and answered by credibility obstetrics and gynecology doctor. In other services, Jakpros has an educational page contains with general knowledge about reproductive health which is divided into several sections (e.g. contraception, high-risk pregnancy, malignancy, etc.).

Currently, Jakpros application has begun to be used in several sub-district hospitals in Jakarta. Our aimed is to identify community perspective about some reproductive health knowledge and explain the community perspective and opinion after they used it in their daily basis activity. In the next days, we hope to find ways to improve the usage and increased quality of Jakpros application in women community.

2. Methods
This study is a continuation of our quantitative research in the past. In the previous study, the participant had to use Jakpros application for several 2 weeks. We saw the difference of their knowledge by pre and post-test questionnaire. In this study, we would like to explore their opinion and detailed perspective on reproductive health and Jakpros application. We were using a qualitative method for analyzing the main topic. Our main sources are the natural environment and the real event that occurred in the subject. We would like to explore and detail to explain participant behaviors with their different perspective. We adopted phenomenology study as our basic paradigm. This paradigm goals are to evaluate subject experience as factual as possible. Furthermore, it described another point of view of their different perspective [8].

Subject recruitment was conducted in May 2018, our subject had participated in quantitative data collection before. We recruited participants from two several Sub-District Hospital in Jakarta; Tanjung Priok Sub-district Hospital and Tanah Abang Sub-district Hospital. We used purposive sampling with this followed criteria :

- Women who had participated in our past quantitative research
- Women who had been using Jakpros Application for 2 weeks
- Women who lived in Jakarta
- Willing to filled-out the informed consent

Our method of this study is focus group discussion and direct observation. The study consisted of participants and divided into two different group section. Data collection in both groups was carried out in different days. Discussion forum held in the hospital hall. Our researcher team for discussion consisted of two obstetrician and gynecologist doctors and one of general practitioner doctor. The list of question was made by doctor. The reproductive section was a same question with the previous questionnaire. But, the previous one was multiple choice. In this time, we could see their real answer
and their perspective too. Subject was asking about reproductive knowledge such as malignancy, cervix cancer, pregnancy care, contraception, and high-risk pregnancy. We asked it to measure the level of their knowledge after used Jakpros for several months. After that, we focused to ask about the use of Jakpros application. They shared about their personal experience in using it for their daily basis. Participants were asking about obstacle and benefit after used it. In the discussion, we gave one question and participant took turns to answer it. We were throwing questions and guided the discussion session. There were no wrong or right answers in that moment, we did not lead an opinion and in a neutral position. We tried to make this discussion as relaxed as possible and the participant could enjoy to tell them. For one discussion held for one hour, we recorded all of discussion with audio record and documented with photos. For data analysis, we transcript the data from results and make a coding for all of participant answers.

3. Result

The discussion forum was conducted by 12 participants from two sub-district hospital in Jakarta. Most of them was a housewife in 24-38 years old and had a high school as their educational background. They had participated in the previous study in quantitative. They had to use a post-test questionnaire and it was a qualitative study. We explored their result by discussion group.

3.1 Malignancy and Cervical Cancer in Reproductive Health

The very first question was about malignancy in reproductive health. We asked about their perspective deeply. As we knew before, as soon as possible people aware of malignancy symptoms. It can be treatable rather than late. If the people aware about it, they can be making decision in the beginning. Their answer about it was good. They knew several types of malignancy in women and what the initial symptoms. Participant knew the etiology of cervical cancer and preventable by HPV vaccination. Some of them knew the type of examination to detect malignancy and treatment such as radiotherapy or hysterectomy in cervical cancer. For cancer prevention, they agreed to keep hygiene and do not change sexual partners. Surprisingly, they knew basic knowledge about malignancy and cervical cancer.

“Cervical cancer is cancer in the neck of utery. I know another type of malignancy in women such as ovarian cancer. For the sign, bleeding is a sign for cervical cancer and bump in breast for breast cancer. I heard food can be an etiology for cervical cancer. A blood test is for detecting cervical cancer. I heard too for cervical cancer treatment, doctor will do cryotherapy but I do not know what is therapy that and doctor will do surgery too. If we would like to prevent it. We have to do genital hygiene well such as change pads periodically during period and do HPV vaccination. I thought people in active sexual intercourse have to do further examination for early detection and if the result is positive, the treatment will be done earlier”(A02)

“The malignancy in breast is bump in breast and changed the skin surface changed like an orange skin. I heard USG for detecting ovarian cancer and if positive doctor will do radiotherapy”(A04)

“Bloody pee is a sign for cervical cancer, but I am not sure. It happened because of HPV virus. Genetical and had many sexual partners are etiology too. The detection will be doing with pap smear examination. One of type for the treatment is chemotherapy. My friend did it before, she was in cervical cancer and now she is passed away. We can do preventable things like hygiene and just faithful for your sexual partner. I heard about HPV vaccine, you will do it three times and you can do hepatitis B vaccine too. If people in active sexual intercourse, you have to do routinely pap smear or IVA test at least once in one year”(A05)

“The important things for preventing does not ever change your intercourse partner. Be faithful and keep your hygiene. Get your pap smear test after marriage”(B01)
3.2 Anemia and Nutrition in Pregnancy
The second question was about anemia and nutrition in pregnancy. Anemia and nutrition are related. Most of them do not know the initial symptoms and what the main nutrition component during pregnancy. In Jakpros educational section we shared about it in order to make people more aware. Basically, in the result, most of the participant knew what the main symptoms in anemia. They knew what test to detect and how to treatment. They did know well for iron component in food. Surprisingly, just one of them notices that postpartum hemorrhage as a complication in anemia. Their answers about nutrition still in basic knowledge.

“Sign of anemia are dizziness and weakness. Anemia is decreased of Hb and we will know it after blood test. So the doctor will give blood booster supplement. For the preventive do not be tired. If get anemia during your pregnancy, you will be in blood transfusion after birthed. I know component of nutrition are carbohydrate, calcium, iron, fat, vegetable and vitamins. Those are so important in pregnancy. Calcium for fetal bone. Protein for fetal brain, carbo for fetal weight and iron for mother blood. I am not sure but you have to take folic acid, iron and calcium supplement once in daily during trimester 2 and 3” (B.06)

“Anemia is decreased iron in your body. I eat meat regularly to prevent it. A serious side effect is bleeding after birth. I know folic acid important for your baby brain”(B.05)

“Anemia will be preventing by eating food contains iron. A baby weight will below because of it”(A.04)

“Anemia is lack of blood, we need vitamins”(A.03)

“During anemia, the sign is nausea” (B.02)

3.3 Contraception and Family Planning
We continued to discussion about this question. Knowledge in contraception and family planning are very crucial. Every couple must prepare for pregnancy well. It is a one of all component for achieve best quality in life. In past question, 2-3 participant were not participated to answer, but in this question most of them answered. We thought their knowledge or interested about this topics. They answered a question and share their personal experience too. Most of them active and knew about it. Participant knew what the main goals, contraception type and side effect. Moreover, they know what should they do to choose contraception for them. Husband, doctor and their self are involved in choosing the right one contraception. They thought the only one person who knows our body is yourself. Lastly, they will choose contraception depended on their body need.

“Type of contraception are condom, pill, IUD and injection. I used pill before and it made me fat. Pills and injection will make gain of weight. For injection use for regularly 1 or 3 months injection. I was lazy and I choose IUD it can be used for 5 years. I had USG check before choose IUD and I shared it to husband for choosing the right one. Now, I am having IUD for contraception”(A.06)
“Aim of the contraception for spacing our pregnancy. I used not to use contraception. I was pregnant 1.5 years ago and I am in 2 months pregnant right now” (B.06)

“The only one contraception for preventing STD is condom. I knew pills and injection side effect is bleeding. I told to my husband before I choose it. Our convenience is important” (B.04)

“I used contraception for making a space in my pregnancy. Type of contraception are calendar the old one, pills, condom, and operation. Condom will prevent STD, pill makes bleeding. IUD will make bleed too but not gain weight. If you are careless, do not ever pill or injection. I do consultation with my doctor before I choose the right one. Now I choose natural ones such as calendar and coitus interruptus, my husband can work together” (A.02)

“I take one pills every day, I always remember it. It depends on your body, just you know it well”

“IUD can be used until 5 years later, it works for me” (A.05)

3.4 Implementation of Jakpros for daily

In the last question, we asked the implementation of Jakpros application for them, what a benefit, or obstacles in used it for daily. They shared about opinion and their story about it. Jakpros application got positive benefit from them. It gave many advantages such as knowledge.

“I used it to get knowledge about reproductive health. My purpose is for getting updated news. So I routinely read educational page. It would be better if they posted it every day or weeks, so I’ll keep updated” (B.01)

“I checked my doctor schedule through Jakpros. It made easier to access information, and I do not have to call the hospital to ask. I can check my pregnancy estimate with input my last period. Unfortunately, it is not connected to direct registration and not available in all of hospital in Jakarta” (A.04)

“Jakpros has increased my knowledge. I totally trust it because I get it from trusted sources. Question and answer helped me a lot. Sometimes I feel shy or lazy to go to doctor just for ask. I can access it anywhere” (A.01)

“I can ask to the doctor without hesitation and shame. I hope the doctor could online in 24 hours and fast response” (B.06)

4. Discussion

In this paper, we revealed their perspective about reproductive health knowledge and Jakpros application after they used it in their daily basis. Firstly, they could recognize the early sign of malignancy or something wrong with their body (e.g. bleeding, bumps in breast). Furthermore, for malignancy, they knew about a basic examination for diagnostic and treatment that doctor will do for the case. The study found that women basically are more aware of malignancy in reproductive system. They tried to recognize the sign and risk factor of it [9]. According to study, patient will seek to the internet for searching further information about their symptoms and related to make decision [10]. In this study, we found out the patient knew in cervical cancer prevention. They told to prevent it people have to keep our genital hygiene, do not change sexual partner, be faithful, and do HPV vaccination regularly. As the perspective, they agreed that people in active sexual intercourse or married have to do examination routinely to prevent and early detection. For increasing their knowledge and awareness in malignancy, social media has been used as an effective platform [11]. Afterward, we asked them in contraception question. We found out their perspective about it was better. They could explain the contraception purpose, besides that they knew the type, benefit and side effect in
contraception. They involved their husband, doctor and their self in make decision for picking the right one contraception. They perspective in contraception as a media for arranging pregnancy, they told that family planning was an important thing, and cooperation with husband and their self is needed. Information and decision making for choosing right one contraception depend on their social networks. They are more comfortable to gather to get information from family, husband or colleague. Besides that, they are interested to further discuss through social media [12].

For the question in pregnancy, we asked the participant about anemia, nutrition, and high-risk pregnancy. We found out that they knew the definition of anemia, early sign, examination, treatment and how to prevent it. They agreed that anemia in pregnancy is a serious condition. Also, they admitted nutrition in pregnancy is important things, they could mention us the component and function of nutrition that needs in pregnancy. They awared with early sign of high-risk pregnancy. They perspective for preventing it with do antenatal care regularly and keep healthy lifestyle during pregnancy. We found in the past study, pregnant women have a tendency to use mobile health application. They used it to gather in a sharing group who have the same condition with them. For some people, pregnancy is a stressful moment, they could use mobile application for discussing in a group, share their experience during pregnancy, and it works to make a peace of their mind. Simply, they had opportunity to access it any time for getting advice and knowledge [13].

Our finding regarding participant experience and perspective for using Jakpros application in several time. Jakpros had the positive response in the feature. We have to realize we are living in digital era and it has a direct impact on the level of community needs for accessing health information. In the very first statement, they agreed Jakpros was serving a feature who helped to access information and get a knowledge. The previous study has shown that people need to get information in fastest way and accessible in anywhere. Most of people feel lazy to go to doctor or simply they are shy to ask it [13]. The quality of information was still a big challenge in the past study. A credibility of the information is still doubtful because anyone can share their idea. The bad one will lead them to misconception and it had a direct impact on decision [6]. Our study showed that patient did not hesitate to get information from Jakpros. They agreed Jakpros was a platform for getting right information from reliable specialist doctor. Especially, they can make a consultation with a doctor about their reproductive problem and they do not have to pay it. In increasing a quality of Jakpros. We have to concerned in several things. Firstly, the participant told they needed an educational page to more active and update regularly. Secondly, the doctor should be fast response in 24 hours to answer their question. Lastly, Jakpros was limited to access about doctor information in several sub-district hospitals only. They hope in the next day it could be accessed by all hospital in Jakarta.

In a previous quantitative study, we found out their knowledge has been increasing after they used it in 2 weeks. For this study, we could see their perspective on reproductive has changed too. They knew basic knowledge of reproductive health, at least their level of awareness has been increased. It would help to lead people to make decision later. Their perspective in Jakpros as a helpful application for daily using. The development in this application still needed to improve all feature in it. In the next day, we hope Jakpros is right woman platform for looking information and people who get knowledge will apply it to their life.

Lack of the previous study was one of our limitations. Furthermore, it was difficult to explore their perspective in a short time.

5 References
[1] Haque M, H.S., Rumana Ahmed K, Sultana T, Chowdhury HA, Akter J, 2015. A Comparative Study on Knowledge about Reproductive Health among Urban and Rural Women of Bangladesh. Journal of Family & Reproductive Health. 9(1):35-40.
[2] Elfaki, A.O. and M. Alotaibi, 2018. The role of M-health applications in the fight against Alzheimer’s: current and future directions. Mhealth. 4: p. 32.
[3] Lu, C., et al., 2018. The Use of Mobile Health Applications to Improve Patient Experience: Cross-Sectional Study in Chinese Public Hospitals. JMIR mHealth and uHealth. 6(5).
[4] Kayyali, R., et al., 2017. *Awareness and Use of mHealth Apps: A Study from England.* Pharmacy (Basel). 5(2)

[5] Eytan, T., et al., 2011. *Social media and the health system.* Perm J. 15(1): p. 71-4.

[6] De Martino, L., et al., 2017. *Social media for patients: benefits and drawbacks.* Curr Rev Musculoskel Med. 10(1): p. 141-145.

[7] Santoso, H.Y.D., et al., 2017. *Android Application Model of "Suami Siaga Plus" as an Innovation in Birth Preparedness and Complication Readiness (BP/CR) Intervention.* J Family Reprod Health. 11(1): p. 30-36.

[8] Hasbiansyah, O., 2005. *Pendekatan Fenomenologi : Pengantar Praktik Penelitian dalam Ilmu Sosial dan Komunikasi.* DIKTI. 56

[9] Mukama, T., et al., 2017. *Women's knowledge and attitudes towards cervical cancer prevention: a cross sectional study in Eastern Uganda.* BMC Womens Health. 17(1): p. 9.

[10] Tan, S.S. and N. Goonawardene, 2017. *Internet Health Information Seeking and the Patient-Physician Relationship: A Systematic Review.* J Med Internet Res. 19(1): p. e9.

[11] Lenoir, P., et al., 2017. *Raising Awareness About Cervical Cancer Using Twitter: Content Analysis of the 2015 #SmearForSmear Campaign.* J Med Internet Res. 19(10): p. e344.

[12] Yee, L. and M. Simon, 2010. *The Role of the Social Network in Contraceptive Decision-making Among Young, African American and Latina Women.* Journal of Adolescent Health. 47(4): p. 374-380.

[13] Lupton, D., *The use and value of digital media for information about pregnancy and early motherhood: a focus group study.* BMC Pregnancy Childbirth. 16(1): :p.171.

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