



# THE SATISFACTION OF TODDLER'S MOTHER TOWARD THE USE OF THE E-POSYANDU KESEHATAN (E-POK) APPLICATION IN ISLAND TERRITORY

by

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## ABSTRACT

COVID-19 has been declared as a global pandemic by WHO (World Health Organization). The government has regulated several important points regarding to the routine services, including the elimination of services for toddlers at *posyandu* where monitoring is carried out independently at home using the KIA handbook by the mother or family. This causes the lower participation of toddler's mothers to visit *posyandu* in the island territory. The researchers are interested in designing an application that can be used as an alternative way to monitor the growth and development of toddlers for those who cannot attend at *posyandu* either because of the COVID-19 pandemic or the limited access. This study aims to determine the satisfaction of using Android-based e-Posyandu Kesehatan (e-PoK) application as an alternative *posyandu* in the island territory. This study used a *quasi-experimental design with one-group posttest-only design*. A total of 138 respondents were taken by proportional stratified random sampling. The data obtained were analyzed univariately. Based on the results of the study, the category of respondents' satisfaction with the ePoK application was mostly satisfied category (92.75%). Based on these results, it is expected that toddlers' mothers can utilize the advantage of e-PoK application to monitor the growth and development of their toddlers as an alternative way to do *posyandu*.

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## 1. INTRODUCTION

COVID-19 has been declared a global pandemic by WHO (World Health Organization). The Large-Scale Social Restrictions (PSBB) affected most of the community's activities should be carried out from home (WFH) and resulted a change in social habits to always maintain distance, use masks and wash hands. The implementation of PSBB greatly influences changes in the socio-cultural conditions towards the community, including nutrition and child health service activities. Some policies to do activities from home, always maintain a distance, use masks and wash hands with soap using running water have caused nutrition and child health services in some places running suboptimally, including the growth monitoring activities at *posyandu*. This condition can affect the growth and health children's conditions shows unascertainable [1,2,3,4].

The promotive and preventive health service efforts are one of the government's concerns, especially for infants and toddlers. The government has regulated several important points regarding routine services provided to infants and toddlers, including the elimination of toddler services at the *posyandu* so that monitoring of growth development and stimulation of the toddlers and pre-school children is carried out independently at home using the KIA Handbook by the mother/family; all monitoring of toddlers at risk, immunization services, provision of supplementary food and Vitamin A is carried out by teleconsultation/appointments/home visits by cadres or health consultants; and the implementation of toddler's mother classes was postponed or carried out using the online method

[5]. *Posyandu* is a form of Community Based Health Efforts (UKBM) which is managed and organized from, by, for and with the community towards the support of health development, in order to empower the social community and provide them convenience in obtaining basic health services to accelerate the reduction of maternal mortality and morbidity. baby. UKBM is a support system for community empowerment, which is formed on the basis of community needs, managed by, from, for and with the community, with guidance from Puskesmas officers, cross-sectoral and other related institutions [6].

The main activity carried out at *Posyandu* is monitoring the growth and development of toddlers. Growth monitoring is a series of activities consisting of measuring physical growth and individual development in society with the aim of improving children's health status, progress and quality of life [7]. Providing immunizations, weighing infants and monitoring developments of infants and toddlers is no less important than efforts to prevent COVID-19. Hence immunization and other health services, especially in the early stages, can help them grow, develop and increase children's immune systems. This is exacerbated by the inability of cadres to innovate *posyandu* services during the COVID-19 pandemic [2,8,9]. Restrictions on mobility due to the pandemic have also affected to the low participation of toddlers' mothers attending *posyandu* in island territory. The geographical condition of the islands causes *posyandu* location is not always be on the same island as they live. Therefore, it is urgently needed land or sea vehicles to reach *posyandu* location. One of the priorities for health reformation is to increase the distribution of quality health services for the people in island territory. Any intervention to improve access to health services requires consideration of many aspects, such as social, economic, and cultural [10,11].

Changes in social conditions that occurred in the midst of the COVID-19 pandemic also caused major changes in the use of digital technology. This is supported by several regulations, one of which is the Circular Letter of the Minister of Health Number HK.02.01/MENKES/303/2020 concerning the implementation of health services through the use of information and communication technology in the context of preventing the spread of Coronavirus Disease (COVID-19). Wibowo (2020) said "With the fourth largest population in the world, Indonesia has potential in the development of digital health technology (*eHealth*). This technology is expected to simplify Indonesian to get health access and service easily, which will benefit more than 269 million people living on 17,504 islands across Indonesia." [12]. The rapid development of technology urges most people choose simple, attractive, practical media and accessible anytime and anywhere. Various applications can meet all needs and help solve community problems, especially in the health sector [13,14].

In an effort to make it easier for toddler's mothers to access *posyandu* services through a technological approach, the researchers created an application design called as e-PoK (e-Posyandu Kesehatan). This Health E-*Posyandu* is based on an Android mobile application intended to assist the development of a "digital ecosystem" in the health sector, especially mothers of toddlers, in monitoring the growth and development of toddlers independently through a technology media. The e-PoK application is designed to approach the real conditions of offline *posyandu* services. Based on the above recent phenomenon, the researchers are interested in examining the satisfaction of mothers of toddlers in using the e-PoK application as an alternative way to monitor the growth and development of toddlers living in island territory and unable to attend *posyandu* either due to the COVID-19 pandemic, limited access or other reasons.

## 2. RESEARCH METHOD

The type of research is quantitative research. The design of research used a quasi-experimental one-group posttest-only design. Respondents were given an application to use for one month duration. After one month, respondents were given a questionnaire about the satisfaction of using the application which consisted of aspects of *tangible, reliability, responsiveness, assurance and empathy*. Before the questionnaire was used, a trial test was firstly carried out to know the validity and reliability of the measuring instrument. The validity test technique used the Pearson Product Moment validity test. Validity and reliability tests have been conducted on 30 mothers who have toddlers. All questions contained in the questionnaire were valid, with a significance value obtained  $<0.05$ . The questionnaire is also reliable because the value of Croanbach Alfa  $> 0.6$  is 0.912. The population in this research were mothers of toddlers who participated in *posyandu* in Riau Islands area. Based on the calculation, the minimum sample size obtained is 138 respondents. The sampling technique in this research is proportional stratified random sampling. Furthermore, the data obtained were analyzed univariately based on the dimensions of respondent satisfaction. The research was conducted after obtaining an ethical feasibility letter from the research ethics commission; Health Research Ethics Committee of Stikes Patri Husada Blitar with No: 06/PHB/KEPK/29/10.2021.

## 3. RESULTS AND ANALYSIS



### 3.1. Result

The application was used by 138 respondents for one month duration, then all respondents were given a questionnaire about their satisfaction towards the application. All features available in this application have been tried and used by all respondents. According to Parasuraman et al. in Lupiyoadi (2014), there are five dimensions of service quality, mentioned as *tangible*, *reliability*, *responsiveness*, *assurance*, and *empathy* [15]. The following are the results of the respondent's satisfaction questionnaire on the e-PoK application.

Table 1  
 Respondents' Satisfaction towards the ePoK Application

Dimensions of Satisfaction	Frequency	Percentage (%)
<b>Tangible</b>		
Quite satisfied	3	2.17
Satisfied	19	13.77
Very satisfied	116	84.06
<b>Reliability</b>		
Quite satisfied	3	2.17
Satisfied	10	7.25
Very satisfied	125	90.58
<b>Responsiveness</b>		
Quite satisfied	5	3.62
Satisfied	18	13.04
Very satisfied	115	83.33
<b>Assurance</b>		
Quite satisfied	1	0.72
Satisfied	8	5.80
Very satisfied	129	93.48
<b>Empathy</b>		
Quite satisfied	4	2.90
Satisfied	10	7.25
Very satisfied	124	89.85
<b>Satisfaction</b>		
Satisfied	10	7.25
Very satisfied	128	92.75

Based on table 1 above, all the dimensions of satisfaction, most of the respondents are categorized on very satisfied towards the e-PoK application. Likewise with the satisfaction variable in general, most of the respondents are in very satisfied category.

### 3.2. Discussion

Based on the results of univariate data analysis, it was found that respondents' satisfaction towards the e-PoK application was in the satisfied category of 10 people (7.25%) and very satisfied category of 128 people (92.75%). Satisfaction is an essential factor in developing an application. User satisfaction or dissatisfaction is a response to the evaluation of the perceived discrepancy (*disconfirmation*) between previous expectations and the application's perceived performance after using it. Dimensions of satisfaction consist of 5 factors likely tangible, reliability, responsiveness, assurance and empathy.

Respondent satisfaction is supported by the results of research conducted by Soleh and Wijianto (2017) who developed a web-based posyandu application [16]. From this research, it was found that the use of internet technology easily facilitates access to information because database can flexibly be accessed online whenever and wherever by the users. The *posyandu* information application is a kind of application that utilizes internet technology to manage data and deliver information in general, thus easily facilitate the delivery of information on *posyandu* activities because it can be accessed online by the public.

#### a. Tangible dimension

Tangible dimension is the ability of the application to show its existence to the user. The dimension includes the facilities or features provided in the application, as well as the appearance of it. The display dimension measures user satisfaction in terms of the appearance of an application. This application has been made as attractive and simple

as possible. The features provided are such as registration / filling in biodata, monitoring growth and development of toddlers, explanations about the results of growth and development, child immunization schedules, reminders for immunization schedules, vitamin A, and deworming, health information, history of children who have been inputted, chat rooms, and guidelines of toddler care during the pandemic. Based on the results of the study, most of the tangible dimensions were stated in very satisfied category as many as 116 of 138 respondents (84.06%). These results are in line with the research of Nathalia and Fawzi (2018) that based on observations made by researchers during *posyandu* activities, as well as from interviews conducted with *posyandu* cadres and mothers, the researchers identified that one of the most supporting factors to easily understand the m-Posyandu application was the availability of visual images in the mPosyandu application [17].

b. Reliability Dimension

Reliability is the ability of the application to provide benefits accurately and reliably. This application is designed to adapt to the current situation, regarding to the provision of information about COVID-19. Based on the results of the study, most of the dimensions of reliability were in the very satisfied category as many as 125 of 138 respondents (90.58%). Therefore, it can be concluded that the e-PoK application is considered beneficial, in which respondents can feel various benefits, both from online *posyandu* services and the health information provided.

c. Responsiveness Dimension

Responsiveness is the ability to provide rapid and precise service, ease of use and also clear information delivery. The way of easiness to use and access becomes an essential point in the information system and to design a system with a user-friendly interface so that users can easily use this application. The better the ease felt by users in using the application, the more the satisfaction will increase [18]. The ease of using a new system depends on the users who use it. In the aspect of convenience, what is meant is how this android application is easy to understand, learn, access onwards by the user [19]. Based on the results of the research, the responsiveness dimension was mostly in the very satisfied category stated. Therefore, it can be concluded that e-PoK application is considered responsive, where respondents can access the ease of using e-PoK features because the services provided are rapid and precise. Respondents can communicate directly with the application owner through one of the chatroom features, so respondents get quick responses and feedback.

d. Dimensions of certainty and assurance

Dimensions of assurance is an explanation of how to use the application, as well as the application's ability to foster a trust and sense of security for users. The e-PoK application does not store user identities so it is safe from data leaks and hacks. In addition, the use of the e-PoK application does not interfere with the use of gadgets or the use of other applications contained in the gadget. So it can be concluded that the e-PoK application is considered safe from data leakage or other interferences when using it. Respondents are not worried about data leaks or errors with their gadgets when using the e-PoK application.

e. Dimension of Empathy

Dimension of empathy, which is in accordance with user needs, assists the users in solving certain problems, understands the users' desires, and accessible any time. If the mother does not have time to bring her toddler to *posyandu*, the child's growth and development still can be monitored using this application. The monitoring has been designed according to the age of the child. If a problem or deviation is found in the child's growth or development, then there are suggestions or recommendations that must be carried out by the mother. Respondents can also use the features available in the application.

#### 4. CONCLUSION

Based on the results of the analysis and discussion presented, it can be concluded that the category of respondents' satisfaction with the e-PoK application is mostly in the very satisfied category. As for each dimension of satisfaction, the results show that all dimensions are in the very satisfied category. Referring to the results of the previous research, several suggestions are put forward and expected to be taken into consideration, including: toddlers' mothers can use the e-PoK application to monitor their toddler's growth and development independently at home if they cannot visit to *posyandu*. The following, other institutions related to *posyandu* services highly recommended to be able to participate in utilizing the e-PoK application as an alternative way instead of offline *posyandu* activities that are unable to conduct in their implementation. Finally, it is still necessary to develop an e-PoK application that can not only be used by toddlers' mothers but also *posyandu* cadres.

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