The role of information systems towards the success of the family planning program: a literature review

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Abstract. Family planning is an arrangement aimed at forming a prosperous family by limiting the number of births by using contraception. Birth control can reduce unwanted pregnancies, high-risk pregnancies, and prevent maternal death. One of the information systems that has been used in the health world is the immunization day reminder and management of hospital activities. The reminder system is effective as a reminder of the immunization schedule. This wireless technology helps health workers quickly and practically in health services. The use of information systems in family planning programs can support the success of family planning, one of which is to reduce the number of family planning failures and the proper use of family planning. This study uses the PRISMA protocol guidelines. The referenced journals come from various sources that have good publishing credibility and can be accounted for. This study discusses how information systems play a role in the success of family planning programs. The method used in this article is a systematic literature review. This study discusses a number of journals by examining in detail in preliminary studies, research objects, performance indicators, variables and methods applied so as to briefly learn the benefits of information systems as a tool for the success of family planning in midwifery services.

1. Introduction

At present population growth is a problem for all countries in the world, one of which is Indonesia [1]. These problems can lead to uncontrolled economic and social implications and hence the higher population growth, the greater the effort that must be done by the state to maintain the welfare of its people [2]. The threat of a population explosion in Indonesia is increasingly apparent, it can be seen in the period of 3 years the population of Indonesia has increased from 261,1 people in the year of 2016 became 263,9 people in the year of 2017 and in the year of 2018 total population reaches 266,7 people. The family planning program was first initiated in the country of Pakistan among other developing countries. Family planning programs can reduce the rate of population growth [3]. The Indonesian government is also trying to curb the pace of growth with the family planning program, where is the program is integrated into national development aimed at creating the welfare of the Indonesian population to achieve a good balance [4].

Family planning is an arrangement aimed at forming a prosperous family by limiting the number of childbirths by using contraception. Birth control can reduce unwanted pregnancies, high-risk pregnancies, and prevent maternal death [5]. The most widely used contraception since the years 1991
until the year 2012 are pills and injections. The trend of injecting contraception continues to increase, while the use of contraceptive pills has decreased. The prevalence of contraceptive use in couples of childbearing age in Indonesia tends to use injections equal to 51.3%, then followed by a large pill 22.1%, IUD amounted to 7.8%, implant amounted to 7.3%, sterilization amounted to 6.1% and condoms as big as 2.7% [6]. The spread of mobile technology has developed rapidly in the field of e-health in the form of innovative applications to overcome health problems. One of the problems is that it can facilitate the process of communication from the community to health services and vice versa, providing support to health workers. The sophistication of this network that offers higher data transmission speeds is powerful in changing the way health information services are accessed, delivered and managed with increased accessibility, greater personalization and community-focused public health [7].

Research develops innovative methods for reminder immunization days. This study utilizes smartphones as a medium for vaccination systems for vaccinations as well as getting reliable information about vaccines. Strengths or impacts on patients from the study are making parents interested in the new technology as a reminder of a more modern and easy-to-use immunization schedule [8], compared to the manual reminder of immunization days, but the weaknesses that both service providers need to find innovative ways to effectively communicate with patients and their families to help them get information[9]. Research on text message reminders has been carried out in Kenya using text message reminders sent to health workers’ cellphones as treatment guidelines to improve and maintain compliance with pediatric malaria patients for outpatient care. The method used by the intervention group was where all health workers received text messages on their own mobile phones about malaria case management for 6 months, while the control group where health workers did not receive any text messages. The results of the study improve the performance of health workers for malaria case management practices and improve malaria patient compliance for outpatient care [10]. There have been various kinds of studies that mention the extension of the family planning program launched by the Indonesian government to reduce the high birth rate. The program has not been fully implemented because the family planning program counseling location is not yet on target, therefore a system is needed to help the National Population and Family Planning Agency in determining the location of the Family Planning Program Priority Counseling so that counseling is on target.

2. Method

2.1 Steps of the information system development method

Make preparations including preparing plans for preparing questions and answers in this paper, conduct analysis in accordance with planning, create a system design, conduct a systematic review and do an assessment.

![Figure 1: Systems development life cycle](image)

2.2 Research questions

1. How information technology plays a role in the success of family planning programs?
2. How information technology plays a role in health care?
3. How does information technology help in family planning services?

2.3 The steps to write
Do an article search, do article filtering, article evaluation and merging articles [11].

![Figure 2. Step of Systematic Literature Review](image)

2.4 Data extraction
Reference filtering is then identified after which data extraction can only be done which can be seen in Figure 3.

![Figure 3. The stages of selecting relevant articles](image)

3. Results and discussion
The family planning program in Iran was launched in the year 1989. An information system used to help acceptors or families make decisions about the use of contraception, and improve the level of relationship between patients and health workers. The results of that research show that service has improved significantly and the use of the tool has increased interactions between clients and healthcare workers, including verbal and nonverbal communication as well as increasing the choice of client methods, and provider technical competencies. Family planning programs in Iran are often praised as one of the most successful programs worldwide because they are considered to have made a substantial contribution to the health of women and children, with MMR and unwanted pregnancy rates falling from 37% at the beginning of the program becomes less than 19%. A significant challenge for research remains is that the expansion of the healthcare network covers more than 17,000 villages in Iran take at least a year [12].

The article classifies the relationship cellphone owner with cellphone use about family planning. The results of the study found that in several countries all contraceptive users have a cellphone, where the SMS system had a stronger connection to clinical services. Country Iran women who have cellphones are higher using modern contraceptives compared to women who do not use cellphones [13]. Cellphone
ownership for contraceptive users in Burkina Faso is very important for research, where knowledge about contraception and intervention uses cellular technology [14].

A literature review about reminders using text messages in health care services. The use of technology-based reminders in providing health care services via text messages, or short message services. The results found that almost all SMS reminders help improve patient medication compliance and appointment reminders. In addition, researchers report the many benefits of using SMS reminders, including ease of use, being relatively inexpensive, and sending messages that are fast, automatic and acceptable to the public [15].

4. Conclusions
Based on the results of the systematic literature review, conclusions can be drawn referring to the success of the family planning program contained in the journal published by the media information system is an effective tool in the success of the family planning success program. The role of the information system is very helpful in the success of the family planning program so that the problem of contraceptive use can be overcome through information systems using technology. Based on the first journal review of research results in one country in Iran women who have cellphones are higher using modern contraceptives compared to women who do not use cellphones, therefore the disadvantages of this study are women who do not have cell phones or poor tend to be less educated and tend to use less contraception modern. Based on the review of the second journal the results of research in several countries show that only three countries of cellphone ownership are significantly associated with contraceptive use. Weaknesses of this study indicate that those who receive family planning information via text messages significantly use contraception only in Haiti. Based on the review of the third journal the results of research on family planning programs in Iran are often praised as one of the most successful programs worldwide because they are considered to have made a substantial contribution to the health of women and children, with MMR and unwanted pregnancy rates falling from 37% at the beginning of the program becomes less than 19%. A significant challenge for research remains is that the expansion of the healthcare network covers more than 17.000 villages in Iran take at least a year.

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