



Development of Decision-Making Tool for Family Planning Application: Feasibility Test According to Material Experts

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Abstract

BACKGROUND: The high unmet need affected the high maternal mortality rate in Indonesia. One factor causing unmet needs is an optimal family planning counseling. The tool used for family planning counseling in Indonesia is the decision-making tool for family planning flipchart. However, the use of the flipchart not optimal because it has various limitations, such as being less practical. Researchers have innovated in deciding-making tools for a family planning application.

AIM: This study aims to develop the decision-making tool for a family planning application by conducting a feasibility test by material experts.

METHODS: This was a research and development study design. The research subjects were six midwives as material experts. The research instrument includes the decision-making tool for a family planning application, as well as a questionnaire. Data analysis includes descriptive, and univariable analysis.

RESULTS: The results of the feasibility test for the decision-making tool for family planning application according to material experts obtained a value of 81.3%, which is categorized as very suitable for use as a family planning counseling medium.

CONCLUSION: Further, researchers are expected to develop a second-level application by conducting a trial limited-scale, wide-scale trials, and level 3 testing with experimental designs using a control group.

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Introduction

Unmet need for family planning services is defined as the percentage of currently married women who do not want to have more children or want to space their next birth but do not use contraception [1]. The strategic target for this issue is to reduce the number of *unmet needs* to 9.1% in 2019 [2]. Based on the data, the number of *unmet needs* in Indonesia increased from 12.77 to 17.5%. The high *unmet need* can affect the high maternal mortality rate in Indonesia [3]. Women of childbearing age who do not use family planning have a high chance of getting pregnant and experiencing complications during pregnancy, childbirth, and the puerperium [4].

Factors causing *unmet need*, namely, communication of information, education, and family planning counseling that have been implemented so far have not been optimal [1]. Family planning counseling is a process of exchanging information and positive interactions between clients and midwives or health workers to help clients identify contraceptive needs, choose the best solution, and make decisions about contraception to be used following the conditions being

faced by couples of childbearing age [5]. Counseling is an important element in the family planning program that should be given starting from pregnancy which can be given at the time of pregnancy check-up or during classes for pregnant women [6]. For counseling to be optimal, we need a tool or media for counselors. In Indonesia, so far the tool used is the decision-making tool for family planning flipchart [5]. Various studies have been carried out to determine the effectiveness of the decision-making tool for family planning flipcharts [6], [7], [8], [9]. The problem that occurs at this time, the use of decision-making tools for family planning flipcharts by midwives, is still relatively low.

Based on the research of Widayati *et al.* in 2014, the use of decision-making tools for family planning flipchart by 117 midwives at the Surakarta City Health Office was only 17.9% [10]. This tool has a weakness, namely, it is not practical because it is quite large and strong, so if there is a midwife who will provide family planning counseling to the client's home, the tool is quite burdensome [5]. The results of research conducted by Rokhmah in Cirebon showed that the use of decision-making tools for family planning by midwives at the puskesmas in family planning services had not gone well [11]. Based on previous research conducted

by the researcher, information was obtained that the decision-making tool for family planning flipchart was never used for family planning counseling, but was only used if necessary pictures of the menstrual cycle. This is because the use of decision-making tool for family planning flipchart is difficult, makes them not confident in giving family planning counseling, is ineffective, takes longer, and is heavy to carry so that they are only for display, even though almost all midwives have attended training on using decision-making tool for family planning flipchart [12].

Several health studies have produced information that smartphone-based applications can increase client knowledge, including the effectiveness of the android [13], [14], [15]. To make it easier for midwives to use decision-making tools for family planning which is expected to change behavior in increasing their use, it is necessary to innovate decision-making tools for family planning through an appropriate technology that is innovative and based on evidence-based. Researchers have conducted basic research that resulted in an innovative decision-making tool for a family planning application. This study aims to develop the decision-making tool for a family planning application by conducting a feasibility test by a material expert.

Methods

This was a Research and Development research study designed, to produce certain products and test the effectiveness of these products. Levels in this development research include levels one, two, and three. Level one generates a product design, and the design is validated internally. The second level of research and development is to validate or test the effectiveness and efficiency of existing products.

The third level of research and development is to examine existing products to know the specifications of the advantages and disadvantages/weaknesses of the product. The product design is then tested internally. Internal testing is testing the design based on the opinions of experts and practitioners. Furthermore, the product design was tested in a limited field [16].

Based on these steps, the researcher used steps that had been simplified according to Sugiyono into three stages, namely, stage one (preliminary study) consisting of the literature study, field survey, and preparation of product drafts. The second stage is development, consisting of validation by material and media experts, limited-scale trials, and broad-scale trials. The third stage (testing) is the experimental group and the control group. This research is a development (second stage), namely, validation by material experts. This research was conducted in Cirebon City, West

Java, Indonesia. The subject matter experts are six midwives. Data were collected using research instruments, namely, decision-making tools for family planning application and a questionnaire adopted from the study [17] which was filled out by a material expert (Figure 1).



Figure 1: Examples of a screenshot of a decision-making tool for family planning application

The feasibility test questionnaire for material experts covers aspects of the suitability of the material and aspects of the ease of midwives in absorbing information. Aspects of the suitability of the material consist of the ease of interaction between the midwife and the client, the clarity of the material for family planning counseling, the appropriateness of the material, the appropriate coverage of the material, the completeness of the material, and the relevance of the image to the material. Aspects of the ease of midwives in absorbing information include the ease with which the midwife understands the material through the media, the suitability of the media design with the level of thinking, and the ease of using the media (Table 1).

Table 1: Questionnaire of feasibility test according to material experts

No.	Feasibility test results	Subject
The aspect of the suitability material		
1	Facilitate interaction between midwives with clients	
2	Clarity of family planning counseling materials	
3	Conformity of appropriate material	
4	Appropriate coverage of material	
5	Completeness of material	
6	The relevance of the image to the material	
Aspects of the ease with which the midwife absorbs information		
1	The ease with which the midwife understands the material through the media	
2	The suitability of the media design with a level of thinking	
3	Ease of using the media	
Total		
Average value		
Percentage of results		
Eligibility category		

The score ranges from 1 to 4 (1: poor, 2: adequate, 3: good, and 4: very good). Data were analyzed descriptively. After obtaining a score from a material expert, the average total score is taken, and a percentage is made, with the eligibility criteria < 21% (not workable), 21–40% (not workable), 41-60% (adequate), and 81–100 % (decent) [18].

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Results

The characteristics of the midwives who became media experts in this study were that they had worked as midwives for 14–29 years with educational background Diploma III and diploma IV midwifery and living in the city of Cirebon. The training that has been followed according to the criteria is training on the use of decision-making tools for family planning, contraception technology update training, and midwifery update.

Based on Table 2, six material experts obtained an average value of 29.3, so the percentage of results is 81.3 % so the decision-making tool for family planning application can be categorized into feasible.

Table 2: Expert assessment results material

No. Feasibility test results	Subject					
	1	2	3	4	5	6
The aspect of the aspects stability material						
1 Facilitate interaction between midwives with clients	4	3	4	3	3	4
2 Clarity of family planning counseling materials	3	3	3	3	3	3
3 Conformity of material	4	4	3	3	3	3
4 Coverage of material	3	3	3	4	3	3
5 Completeness of material	3	3	3	3	3	3
6 The relevance of the image to the material	4	4	4	3	3	3
Aspects of the ease with which the midwife absorbs information						
1 Ease with The which the midwife understands the material through the media	4	3	4	3	3	3
2 The suitability of the media design with level of thinking	4	3	3	3	3	3
3 Ease of using the media	3	3	3	4	3	4
Total	32	29	30	29	27	29
Average value	29.3					
Percentage of results	(29.3/36) x 100% = 81.3%					
Eligibility category	Feasible					

Discussion

The assessment carried out by the material expert includes aspects of the suitability of the material and aspects of the ease with which the midwife absorbs information. In the suitability aspect of the material, it includes the ease of interaction between the midwife and the client, the clarity of the material for family planning counseling, the sequence of materials, the coverage of the material, the completeness of the material, and the relevance of the image to the material, while in the ease's aspect of the midwife in absorbing information includes the ease with which the midwife understands the material through the media, the suitability of the media design with the level of thinking, and ease of using the media. Based on the feasibility test or material expert validation, the application of family planning decision-making tools is included in the workable category, with a percentage of 81.3%. Based on general opinion regarding the

decision-making tool for a family planning application, an application should also be made with moving images or pictures of the actual contraceptive device, it could be a video or something else so that it is more interesting for the client and can be viewed again by the client at home.

Various studies same with this research, which use applications in the health sector, have been carried out by the previous researchers, including the feasibility test, The smartphone-based application for monitoring the nutritional status of adolescents (Montuza) has been validated for stage 1 by media experts, showing 72.5% with very valid criteria [19]. The evaluation of the feasibility of the Android-based “NutriHealth” Health application for young women was carried out by expert testing by health experts and a health information system with expert test results used to improve the application so that the application was well received by respondents [20]. Reproductive health education media about leucorrhea based on android, after a feasibility test by material experts and media experts, was declared feasible with a feasibility percentage of 89.56% [18].

Besides these studies, there are applications produced related to contraception. One study that resulted in an application to increase knowledge of hormonal family planning acceptors was the Android-based Mapaccing application, with a feasibility test result of 87.4%, which was categorized as workable [21]. Using Smart Contraception in Makassar is better in dealing with problems or complaints of side effects and the accuracy of the schedule for family planning injections than conventional methods [22].

Another study resulted in the “My Contraception” application which is a contraceptive application designed based on the WHO guidelines on contraception and needs based on the results of evidence-based patient-centered field studies that have been developed to facilitate the search for evidence-based information along with recommendations regarding the best contraceptive fit (according to medical characteristics, preferences, and priorities of a person) helps users make informed decisions about their choice of contraception, monitor their menstrual cycle, fertile period, use of contraceptive methods, and keep records of medical histories [23], [24]. Further, application development was carried out in Jordan to assess the impact of application use on four aspects of oral contraceptive use, including usage habits, awareness, and compliance safety, and to help women make the most informed decisions [25].

Other studies have concluded about the benefits of reminder applications in the use of oral contraceptives with the results of these applications being able to minimize missed oral contraceptive use [26].

Other studies have resulted in the contraception application which can facilitate access to medical

eligibility criteria for contraceptive choices and can help when conducting contraceptive counseling [27]. Another study resulted in a contraceptive decision-making mobile application used by women working in the military. The application shows the satisfaction of clients and service providers [28]. Research using cellular by sending four short daily messages about contraception sent for 4 months in Palestine, Bolivia, and Tajikistan contributed to contraceptive use [29].

The research on contraceptive applications that have been mentioned above is different from this study, because the application consists of the contraceptive method section and the outcome in the previous study, namely, the use of contraception, while in this study, the contents of the application contained all methods. The limitations of this study have only reached the feasibility test stage, so it cannot be assessed the effect of the application on contraceptive use. Based on the various research results, this research requires further research to be carried out on a wide-scale trial so that the effectiveness of the decision-making tool for family planning applications can be known.

Conclusion

The results of the analysis of the feasibility test for the decision-making tool for family planning application according to material experts are very suitable for use as a family planning counseling medium. For further researchers, it is expected to develop a level two application by conducting a limited-scale trial, wide-scale trial, and level three testing with an experimental design that uses control. Based on suggestions from material experts, it is hoped that further research will develop applications by displaying moving images or pictures of actual contraceptives, which can be in the form of videos or others so that they are more attractive to clients and can be viewed again by clients at home.

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