Jurnal Ilmu Dan Teknologi Kesehatan
Vol 10, No 2, Maret 2023,
ISSN: 2338-9095 (Print)
ISSN: 2338-9109 (online)

Educational Media in Increasing Knowledge and Participation of Prospective Fathers in Preparation for Healthy Pregnancy

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Artikel history
Sent, Feb 24th, 2023
Reviewed, Mar 18th, 2023
Received, Mar 31th, 2023

ABSTRACT
There have been 85 million pregnancies worldwide are unplanned pregnancies. Of these unwanted pregnancies, 38% ended in abortions, miscarriages, and unplanned deliveries. Efforts to prevent unwanted pregnancies have been attempted in various ways by various parties. At the beginning of 2022, based on media exploration for the Play Store and YouTube applications, we found several applications and videos related to preparing for a healthy pregnancy. Search results from various online media have not specifically focused on the role of men (prospective fathers) in preparing for a healthy pregnancy. With the preparation of healthy pregnancies by men as prospective fathers, it is hoped that the pregnancy occurring can be properly prepared and planned. This study used a quasi-experimental method. The research was conducted at one Community Health Center in the East Jakarta Region. Respondents were prospective grooms (fathers) who met the inclusion and exclusion criteria. The number of respondents was 96 people. The research instrument used was a pre-and post-intervention questionnaire. The treatment given to respondents was providing educational media using video and leaflet media—analysis of research data using univariate analysis, chi-square, and different tests (independent T-test). Two of the respondent's characteristic variables have a significant relationship with the respondent's level of knowledge about healthy pregnancy preparation, namely education level (P value 0.000) and history of information exposure ((P value 0.000). Two of the respondent's characteristic variables have a significant relationship with the respondent's participation in pregnancy preparation healthy, namely the level of income (P value 0.000) and history of information exposure ((P value 0.05). There is a significant difference (<0.000) in the mean level of knowledge and level of participation of respondents in preparation for healthy pregnancies before and after providing education. The group using the media Video-based education has a higher mean participation rate than the group using leaflets (significance <0.05).
Keywords*: Father to be, Healthy pregnancy, Knowledge, Leaflet, Video,*

ABSTRAK
Terdapat 85 juta kehamilan di dunia merupakan kehamilan yang tidak direncanakan. Dari kejadian kehamilan tidak diinginkan tersebut, 38% berakhir dengan aborsi, keguguran dan persalinan yang tidak direncanakan Upaya untuk mencegah kehamilan tidak diinginkan sudah

DOI: 10.32668/jitek.v10ii.1101

diupayakan dengan berbagai cara oleh berbagai pihak. Pada awal tahun 2022 hasil eksplorasi media aplikasi play store dan youtube ditemukan beberapa aplikasi dan video terkait persiapan kehamilan sehat. Hasil penelusuran dari berbagai media online tersebut belum ditemukan yang secara spesifik berfokus pada peran laki-laki dalam proses persiapan kehamilan sehat. Adanya persiapan kehamilan sehat oleh laki-laki sebagai calon ayah, maka diharapkan proses kehamilan terjadi dapat disiapkan dan direncanakan dengan baik. Penelitian ini menggunakan metode quasi eksperimen. Penelitian dilakukan pada satu Puskesmas di Wilayah Jakarta Timur. Responden adalah calon pengantin pria (calon ayah) yang memenuhi kriteria inklusi dan eksklusi. Jumlah responden sebanyak 96 orang. Instrumen penelitian yang digunakan berupa kuesioner pra dan pasca intervensi. Perlakuan yang diberikan pada responden adalah pemberian media edukasi mengunakan video dan media leaflet. Analisis data penelitian menggunakan analisis univariate, chi-square dan uji beda (uji T independen). Dua variabel karakteristik responden memiliki hubungan signifikan dengan tingkat pengetahuan responden tentang persiapan keamilan sehat yaitu tingkat pendidikan (P value 0.000) dan riwayat keterpaparan informasi ((P value 0.000). dua variabel karakteristik responden memiliki hubungan signifikan dengan partisipasi responden dalam persiapan keamilan sehat yaitu tingkat pendapatan (P value 0.000) dan riwayat keterpaparan informasi ((P value 0.05). Terdapat perbedaan secara signifikan (< 0.000) pada mean tingkat pengetahuan dan tingkat partisipasi responden dalam persiapan kehamilan sehat sebelum dan sesudah pemberian edukasi. Kelompok yang menggunakan media edukasi berbasi video memiliki mean tingkat partisipasi yang lebih tinggi daripada kelompok yang menggunakan leaflet (signifikansi < 0.05).
Kata Kunci: Calon ayah, Kehamilan sehat, Leaflet, Video

INTRODUCTION

Data shows that 40% of the world's 85 million pregnancies are unplanned, and 38% end in abortion, miscarriage, and unplanned childbirth (Omani-Samani *et al.*, 2018). Based on research (Herizasyam, 2016), it was found that of the 96 mothers who were respondents, the majority of respondents did not prepare for their pregnancies; as many as 62 people (64.6%) and 34 mothers had prepared their pregnancies well (35.4%). Various research results and program experiences carried out by various countries, one of them in Indonesia, show that men's involvement in maternal and newborn health has considerable health benefits for women and children, especially in developing countries (Tokhi *et al.*, 2018).

At the beginning of 2022, when we explored the Play Store media and YouTube channels, we found several applications and videos related to preparing for a healthy pregnancy. However, none of these online applications have been found that specifically focus on the role of men in the process of preparing for a healthy pregnancy. With the preparation for a healthy pregnancy that results from the cooperation of partners (male and female), it is hoped that the pregnancy process will occur with better physical, mental, and social conditions (Lassi *et al.*, 2014).

DOI: 10.32668/jitek.v10ii.1101

Healthy pregnancies produce healthy children. A healthy pregnancy requires physical and mental preparation. Research has found that at the age of 21-35 years, the risk of health problems in pregnant women is the lowest, which is around 15% (Kołomańska, Zarawski and Mazur-Bialy, 2019). In addition, when viewed from the development of maturity, women in this age group have reproductive maturity and emotional and social aspects. Various interventions to reduce the Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR) have been attempted by the government through the Ministry of Health. Government efforts, for example, the use of MCH books, dissemination of promotional media, and community empowerment such as the implementation of Pregnant Women Classes and the Birth Planning and Complications Prevention Program (P4K) (Jariyah and Hartati, 2022).

Unwanted pregnancy cases and pregnancies that do not occur on time for a woman (mistimed pregnancy) can be categorized as cases of unmet need. The impact of unplanned pregnancies, besides an impact on pregnancy, is also on the unpreparedness of the mother to get pregnant and can even lead to decisions for unsafe abortion (Pranata and Sadewo, 2012). The condition of unsafe abortion will be very close to the incidence of maternal morbidity and mortality, which is currently still very high in Indonesia. Currently, the programs developed by the government are still related to handling mothers after mother`s experience pregnancy. The government has not explored pregnancy planning programs, especially for couples who are about to marry, especially regarding pregnancy planning programs. The current government program related to new pregnancy planning is around preventing unwanted pregnancies through the Family Planning program (Bronstein *et al.*, 2012). Health programs that are focused on when women become pregnant pose greater challenges and make it more difficult to treat pregnancies that are already unhealthy, for example, pregnancies with anemia.

Family is the first institution in the development of Human Resources." A healthy family and planning for marriage, and preparation for becoming parents will help in increasing the human resource development index. Investing in child development as early as possible is very monumental. Myers' rationale is that: Children have the right to develop optimally; social and moral value responsibility; and help the economy in terms of productivity,

DOI: 10.32668/jitek.v10ii.1101

income, and welfare. Pre-conception service is not just a concept that is debated but describes the paradigm of a country in viewing and assessing strategies for preparing quality resources (Maluka and Peneza, 2018).

Healthy babies and healthy mothers are the dreams of every person and family in all countries in the world. Emphasis on pre-conception services is necessary because data from 36 developing countries shows that the majority of women in the world are overweight (Mendez et al. 2005), and the average use of alcohol and cigarettes has also increased (Ketteringham, Cremer and Becker, 2016). Promoting family health, especially from the time before conception or pre-conception occurs, is an important strategy to improve the quality of children to be born as well as to help reduce morbidity and mortality of mothers and babies. In this situation, it is found that known risk factors that harm the mother and baby that may occur before pregnancy must be treated; for example, the mother has a deficiency of hemoglobin (anemia), lack of folic acid, and behaviors that can interfere with the health of the mother and fetus during pregnancy. Pre-conception counseling is an important component of pre-conception health services. Through counseling, service providers educate and recommend strategies to improve maternal and fetal health (Kyei-Nimakoh, Carolan-Olah and McCann, 2017) Currently, many international health agencies recommend preparation and counseling activities during pre-conception (before pregnancy occurs).

These institutions have produced recommendations and suggestions related to identification and modification in order to reduce risk factors for pregnancy complications, especially for women (Agricola *et al.*, 2013). Although this recommendation has been recommended by many of these institutions, the implementation is very low. One data from India shows that more than 54 percent of women in India do not receive information about pre-conception preparation (Bonte, Pennings and Sterckx, 2014).

In Indonesia, empirical data cannot be found on what percentage of women or couples receive information about pregnancy preparation and planning (pre-conception services). Programs currently being developed by the government are mostly started after the couple undergoes pregnancy, for example, the nutrition program for the first thousand days of life, the P4K program (delivery planning and prevention of complications) as well as family planning programs which are entirely

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targeted at mothers who have undergone pregnancy and other mother and child health programs. The Adolescent Reproductive Health program is one of the programs developed for women who are not yet pregnant. However, from a social and psychological analysis related to preparation and planning for pregnancy, it is difficult to target adolescents because they are faced with cultural values that adolescents are not yet prepared to discuss pregnancy planning (Mazur, Brindis and Decker, 2018).

The need for a paradigm shift in health services focuses on preparation during the pre-conception period to screen couples who are ready to become parents (potential parents) with partners who are not ready to become parents. Boente et al also stated that being ready parents is the most fundamental moral responsibility for every couple (Bonte, Pennings and Sterckx, 2014). Awareness of this moral responsibility will make couples more responsible for preparing and planning before pregnancy occurs so that when pregnancy occurs conditions the couple is more prepared physically, mentally, socially, and economically. This readiness will have an impact on a more responsible pattern of parenting.

The results of research conducted in Tanzania (Maluka and Peneza, 2018), show that every pregnant woman is very happy if she is accompanied by her partner in carrying out antenatal checks or providing social and psychological support during her pregnancy. Meanwhile, on the other hand, the results of this study found that men think that the role of men is only to provide financial adequacy.

The internet has changed the way health service users and health care professionals find health information. The lesson from the pandemic is that health education can be shared through video media which can be shared via the internet so that health workers, patients, or their families do not have to meet face to face. Currently, various applications have been launched in the context of Indonesian, such as Pro Catin (issued by the Tanjung Priok District Health Center), E-KCP (issued by the WASD lab), Kescatin issued by the Directorate of Family Health, KIE Kespra Catin (issued by Kelimpu), and others (Ramanadhan *et al.*, 2013). But there is still no educational video that specifically focuses on the role of men (fathers-to-be) in the process of preparing for a healthy pregnancy. The purpose of this study was to determine the effect of using video-based educational media on the level of

DOI: 10.32668/jitek.v10ii.1101

participation of men (fathers-to-be) in preparing for a healthy pregnancy.

METHOD

This study uses a quasi-experimental method, namely a research design containing a pretest on research respondents before treatment and a post-test after treatment. This research has passed an ethical review with number 590/SK.KEPK/UNR/IX/2022. The form of treatment given in this study was the provision of education about the participation of prospective fathers in preparing for a healthy pregnancy based on video and leaflet media.

The research population was groomed at the Kramat Jati District Health Center, East Jakarta—with a sample of 96 respondents. The inclusion criteria for this study were grooms who would marry for the first time during the study period, were at least 20 years old, and were willing to be research respondents. The study's exclusion criteria were grooms who planned to postpone pregnancy with their partner after marriage.

The time for data collection in this study was carried out in September - October 2022. Data were collected by first providing informed consent sheets to prospective respondents. The data collection tool is a questionnaire tested for its validity and reliability. The treatment material used is educational media in the form of videos and leaflets. Forty-eight respondents received treatment in the form of providing education based on video media, and respondents received treatment in the form of providing education based on leaflet media.

RESULTS AND DISCUSSION

Table 1. Characteristics of Respondents

Variable	N	%
Level education		
Elementary-secondary school	52	54.2
Higher education	44	45.8
Work		
Not yet	9	9.4
Work	87	90.6
Income level		
≤ UMR	35	36.5
>UMR	61	63.5
exposure to information about healthy pregnancy		
not yet	69	71.9
Exposed	27	28.1

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Based on table 1 regarding the characteristics of the research respondents, it can be seen that the majority of respondents have a primary-secondary education background of 52 people (54.2%), most of the respondents have worked as many as 87 people (90.6%), most of the respondents have higher income levels from UMR there were 61 people (63.5%). Most of the respondents had not been exposed to information about preparing for a healthy pregnancy, as many as 69 people (71.9%). In the bivariate analysis, a test was carried out using chi-square to determine the relationship between the respondents' characteristics and the prospective father's knowledge and participation in preparing for a healthy pregnancy.

Table 2. The relationship between the characteristics of the respondents and the respondents' knowledge about preparing for a healthy pregnancy.

Variable	Knowledge of prospective father				N	%	P Value	95% CI
	less		good					
	n	%	n	%				
Level education								
Elementary-secondary school	39	40.6	13	13.5	52	54.2	0.000	5.800 (2.395 – 14.048)
higher education	15	15.6	29	30.2	44	45.8		
Total	**54**	**56.2**	**42**	**43.8**	**96**	**100**		
Work								
Not yet	6	6.2	3	3.1	9	9.4	0.508	1.625 (0.383 – 6.920)
Yet	48	50.0	39	40.6	87	90.6		
TOTAL	**54**	**56.2**	**42**	**43.8**	**96**	**100**		
Income Level								
< UMR	24	25	11	11.5	35	36.5	0.065	2.255 (0.942 – 5.395)
≥ UMR	30	31.2	31	32.3	61	63.5		
Total	**54**	**56.2**	**42**	**43.8**	**96**	**100**		
Informatio exposure								
Not yet	52	54.2	17	27.7	69	71.9	0.000	38.235 (8.190 – 178.504)
Exposed	2	2.1	25	26.0	27	28.1		
Total	**54**	**56.2**	**42**	**43.8**	**96**	**100**		

Based on table 2, it can be seen that from the four variable characteristics of the respondents, it can be seen that the two variable characteristics of the respondents have a significant relationship with the level of knowledge of the respondents in preparation for a healthy pregnancy, namely

DOI: 10.32668/jitek.v10ii.1101

education level (P value 0.000) and history of information exposure (P value 0.000).

Table 3. The relationship between the characteristics of the respondents and the participation of respondents in preparing for a healthy pregnancy

Variabel	The participation of the future father				N	%	P Value	95% CI
	Less		Good					
	n	%	n	%				
Level education								
Elementary-secondary school	22	22.9	30	31.2	52	54.2	0.075	2.200 (0.916 – 5.286)
higher education	11	11.5	33	34.4	44	45.8		
Total	**33**	**34.4**	**63**	**65.6**	**96**	**100**		
Work								
Not yet	4	4.2	5	5.2	9	9.4	0.508	1.600 (0.399 – 6.413)
Yet	29	30.2	58	60.4	87	90.6		
TOTAL	**33**	**34.4**	**63**	**65.6**	**96**	**100**		
Income Level								
< UMR	21	21.9	14	14.6	35	36.5	0.000	6.125 (2.428 – 15.448)
≥ UMR	12	12.5	49	51.0	61	63.5		
Total	**33**	**34.4**	**63**	**65.6**	**96**	**100**		
Informatio exposure								
Not yet	28	29.2	41	42.7	69	71.9	0.041	3.005 (1.017 – 8.879)
Exposed	5	5.2	22	22.9	27	28.1		
Total	**33**	**34.3**	**63**	**65.5**	**96**	**100**		

Based on table 3, it can be seen that of the four variable characteristics of the respondents it can be seen that the two variables of the respondent characteristics have a significant relationship with the respondent's participation in preparation for a healthy pregnancy, namely income level (P value 0.000) and history of information exposure (P value 0.05).

Table 4 Differences in respondents' knowledge before being given education compared to after education

Responden knowledge	Mean	N	Std Deviasi	Correlation	Sig.
Before	33.5833	96	3.46916	0.542	0.000
After	38.0625	96	1.97251		

Based on table 4 it can be seen that there is a significant difference (<0.000) in the mean

DOI: 10.32668/jitek.v10ii.1101

level of knowledge of respondents before and after providing education about preparing for a healthy pregnancy.

Table 5 Differences in Respondents' Participation before being given education compared to after education

Responden Participation	Mean	N	Std Deviasi	Correlation	Sig.
Before	5.3542	96	1.83521	0.616	0.000
After	8.6146	96	1.16411		

Based on table 5, it can be seen that there is a significant difference (<0.000) in the mean participation rate of respondents in preparing for a healthy pregnancy before and after providing education about preparing for a healthy pregnancy.

Table 6 Differences in the average value of respondents' knowledge in the group using video media compared to the group using leaflet media

Responden knowledge	N	mean	Std Deviasi	Std. Error Mean
Video	48	38.6875	1.57313	0.22706
leaflet	48	37.4375	2.14284	0.30909

Respondent participation	levene's Test for equality of variance		t-test for equality of mean						
	f	sig	t	df	sig. (2-tailed)	mean Difference	std error difference	95% CI lower	95% CI upper
Equal variances Assumed	6.577	0.12	3.258	94	0.002	1.25000	0.38369	0.48817	2.01183
Equal variances Assumed			3.258	86.258	0.002	1.25000	0.38369	0.48817	2.01183

DOI: 10.32668/jitek.v10ii.1101

Based on table 6, it can be seen that there is a mean difference in the level of knowledge of respondents about preparing for a healthy pregnancy in the group that uses leaflets and videos. The group that used the video had a higher level of participation than the group that used the leaflet.

Table 7 Differences in the average value of respondents' knowledge in the group using video media compared to the group using leaflet media

Responden Participation	N	mean	Std Deviasi	Std. Error Mean
Video	48	8.8958	1.17128	0.16906
leaflet	48	8.3333	1.09803	0.15849

Responden participation	levene's Test for equality of variance		t-test for equality of mean						
	f	sig	t	df	sig. (2-tailed)	mean Difference	std error difference	95% CI lower	95% CI upper
Equal variances Assumed	48	8.8958	2.427	94	0.017	0.56250	0.23173	0.10239	1.02261
Equal variances Assumed	48	8.3333	2.427	93.611	0.017	0.56250	0.23173	0.10237	1.02263

Based on table 7, there is a difference in the mean participation rate of respondents in healthy preparation in the group using leaflets and videos. The group that used the video had a higher mean participation rate than the group that used the leaflet (significance <0.05).

The level of participation of prospective fathers in this study is related to the participation of prospective fathers in pregnancy preparation consultations, including health checks, supporting expectant mothers in planning their health, allocating special funds for pregnancy preparation, emotional management of partners in preparation for parenthood, reducing risky behavior for pregnancy and carrying out lifestyle behaviors, and healthy in everyday conditions (Agricola *et al.*, 2013). The results of this study follow the results of research (Tokhi *et al.*, 2018) recommending a structured and systematic effort in providing information about

DOI: 10.32668/jitek.v10ii.1101

pregnancy preparation and planning (pre-conception preparation) through the use of communication technologies such as the telephone and the internet to ensure that information is conveyed according to appropriate rules and guidelines

According to (Dean *et al.*, 2013)interventions carried out on couples of childbearing age before pregnancy can increase the potential for more optimal pregnancy health. The interventions carried out are recommended to focus on increasing knowledge and changing the behavior of couples of childbearing age who are preparing for pregnancy for both prospective mothers and prospective fathers (Waggoner, 2015)

Readiness to welcome pregnancy is reflected in the readiness and emotional response of couples of childbearing age (fathers and mothers-to-be) in accepting pregnancy. The process of preparing for pregnancy is also part of the process of preparing to become parents (Dean *et al.*, 2013). According to (Bonte, Pennings and Sterckx, 2014), the education of prospective wives and prospective husbands can influence the knowledge, attitudes, and behavior of prospective mothers and prospective fathers, in health care, including in preparing themselves to be better prepared for a healthy pregnancy.

Knowledge and participation of prospective fathers in avoiding risky behavior on themselves and supporting their partner (prospective mother) to avoid risky behavior can reduce the risk of congenital disabilities. Those who want to get married or are planning to become pregnant are encouraged to consult before pregnancy (pre-conception health care) in the hope that the quality of pregnancy will be better and can avoid things that can cause congenital disabilities in the fetus. Couples who have risky behavior can stop and be more prepared than facing healthy pregnancy preparations (Barton *et al.*, 2015). The participation of prospective fathers in supporting expectant mothers to be healthier and ready for pregnancy will make pregnancies healthier and psychologically and socially acceptable. It will greatly help health services, which are currently struggling with high maternal morbidity and mortality due to pregnancy complications due to unprepared and planned pregnancies. This strategy can cut the cost of health services enormously because it is rooted in community independence(Drysdale *et al.*, 2022).

CONCLUSION

DOI: 10.32668/jitek.v10ii.1101

From the study results, it can be seen that educational media, both videos and leaflets, are positively related to increasing the knowledge and participation of prospective fathers and encouraging positive attitudes toward healthy pregnancies. The use of video media is more effective in increasing the knowledge and participation of prospective fathers in preparing for a healthy pregnancy. The use of educational media, both videos, and leaflets, can help health workers provide information on a massive and continuous basis by taking into account efficiency in terms of time, personnel, and the effectiveness of the tools used.

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