



The Effect of Educational Media Development in Increasing Knowledge and Attitudes on Pregnancy Complications at Sayang Rakyat Hospital in Makassar

Stang Stang¹, Debora Selin^{2*}, Suriah Suriah³, Sumarni Marwang⁴, Anwar Mallongi⁵, Hasanuddin Ishak⁵

¹Department of Biostatistics, Faculty of Public Health, Hasanuddin University, Makassar, Indonesia; ²Department of Reproduction Health, Faculty of Public Health, Hasanuddin University, Makassar, Indonesia; ³Department of Health Promotion, Faculty of Public Health, Hasanuddin University, Makassar, Indonesia; ⁴Midwifery Study Program, Mega Rezky University, Makassar, Indonesia; ⁵Department of Environmental Health, Faculty of Public Health, Hasanuddin University, Makassar, Indonesia

Abstract

Edited by: Mirko Spiroski

Citation: Stang S, Selin D, Suriah S, Marwang S, Mallongi A, Ishak H. The Effect of Educational Media Development in Increasing Knowledge and Attitudes on Pregnancy Complications at Sayang Rakyat Hospital in Makassar. Open Access Maced J Med Sci. 2020 Sep 25; 8(T2):196-199. <https://doi.org/10.3889/oamjms.2020.5227>

Keywords: Educational media; Leaflet; Pregnancy and childbirth complications

***Correspondence:** Stang, Department of Biostatistics, Faculty of Public Health, Hasanuddin University, Makassar, Indonesia. E-mail: stangbios@gmail.com

Received: 10-Jul-2020

Revised: 11-Sep-2020

Accepted: 15-Sep-2020

Copyright: © 2020 Stang Stang, Debora Selin, Suriah Suriah, Sumarni Marwang, Anwar Mallongi, Hasanuddin Ishak

Funding: This research did not receive any financial support

Competing Interests: The authors have declared that no competing interests exist

Open Access: This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0)

BACKGROUND: Each pregnancy and childbirth has complication risks. These complications are accompanying pathological incidences that might cause maternal mortality.

AIM: This research aims to determine the effect of educational media development in increasing knowledge and attitudes about complications of pregnancy and childbirth in pregnant women.

METHODS: This research method passed through several stages as follows: First stage consisted of the development of educational media (leaflets), and second stage consisted of development test with leaflet media using a quasi-experimental research design. The samples were Trimester I to Trimester III pregnant women who visited Sayang Rakyat Hospital Makassar, which consisted of 30 people as intervention group and 30 people as control group. The intervention group was provided leaflets while the control group was provided books on maternal and child health. Data analysis used Wilcoxon Signed Ranks Test and Mann-Whitney test.

RESULTS: The results showed that there are differences in case of knowledge and attitudes of pregnant women regarding complications of pregnancy and childbirth before and after being provided with leaflet intervention with a value of $p = 0.000$. Likewise, there are differences in the case of knowledge and attitudes of pregnant women regarding pregnancy and childbirth complications between the intervention and control groups with $p = 0.041$ and 0.001 , respectively.

CONCLUSION: Educational media on knowledge and attitudes about complications of pregnancy and childbirth has a positive effect in pregnant women at Sayang Rakyat Hospital in Makassar.

Introduction

Pregnancy occurs due to the meeting of sperm and egg cells. Pregnancy lasts for about 10 lunar months or 9 months calendar or 40 weeks 280 days. Pregnancy length is calculated from the 1st day of last menstrual period [1]. Childbirth is the process of fetus or URI delivery with mature age (37–42 weeks) or those that live outside the uterus through the birth canal or through another way, with or without assistance of cephalic presentation that takes place within 18 h, without complications either on the mother and fetus [2], [3].

Maternal health issues continue as one of the sustainable development goals (SDGs) after the millennium development goals 2015, and the target is to reduce the maternal mortality rate (MMR) [4], [5]. The MMRs due to complications of pregnancy and childbirth in 2017 was around 830 women who died every day. The global maternal mortality ratio is

216/100,000 live births which are still far from the expected target. Globally, the SDGs target of 2030 for maternal mortality is 70/100,000 live births [6]. Based on the data in the medical record of Sayang Rakyat Hospital, there were 85 obstetric complication cases (38%) and 24 (10.16%) prolonged labor cases in 2015, 38 abortion cases (36.02%) and 8 prolonged labor fetal distress cases (6.06%) in 2016, 61 abortion cases (57.00%), and 9 prolonged labor/fetal distress cases (8.41%) in 2017 [7].

Many factors may affect the case of obstetric complications, namely: Lack of knowledge on the danger signs of pregnancy has been proven to be a cause of delay in seeking treatment/help. This is supported by the research of Ogu and Orazulike, 2017 [8], [9], which shows that delay in seeking help is recognized as an important determinant of maternal mortality. It also shows that providing health education is absolutely effective in increasing the knowledge on pregnancy of pregnant women [9], [10], [11]. Health education using leaflets is important for pregnant women to

prevent complications and increase MMR and increase pregnant women's knowledge in dealing with the high risk of pregnancy and childbirth complications [12], [13].

Materials and Methods

This research was a quasi-experimental design with a pretest-posttest control group design that aims to assess the effect of certain treatments on a variable. This research involved two groups: An intervention group provided with leaflets and a control group provided with a book of maternal and child health (MCH). Before the intervention, a measurement of knowledge and attitude (pre-test) was conducted for both the intervention group and the control group. After 2 weeks of intervention, the measurement was conducted to both knowledge and attitudes (post-test) in each group.

This research was conducted at Sayang Rakyat Hospital in Makassar, South Sulawesi. This place was chosen because the case of pregnancy and childbirth complications was still quite high compared to other hospitals in Makassar.

The research population was all 1–3-trimester pregnant women who examined their pregnancies at Sayang Rakyat Hospital on March to May 2020. The research sample was some of the 1–3-trimester pregnant women who examined their pregnancies at Sayang Rakyat Hospital. The data analysis used Wilcoxon Signed Ranks Test and Mann–Whitney test with SPSS software.

Results

The process of educational media development is a modified leaflet from the 2016 MCH handbook of Ministry of Health of the Republic of Indonesia and making of Counseling Event Unit. The MCH handbook is modified into a leaflet with several improvements. In preparing this modified leaflet, the researchers involved several parties at Sayang Rakyat Hospital, including Hospital Health Promotion (PKRS) team, the Midwives in charge of the midwifery department, and several pregnant women.

Bivariate analysis was performed to determine differences in knowledge and attitudes about pregnancy complications before and after being provided with leaflet. The results of the bivariate analysis using the Wilcoxon test are as follows:

In Table 1, with the results of Wilcoxon signed ranks test, the knowledge variable obtained $p = 0.000$ that was smaller than $\alpha = 0.05$. It could be concluded

that there were differences in maternal knowledge about complications of pregnancy and childbirth before and after being provided with leaflet intervention of MCH handbook modification.

Statistical test results on the attitude obtained $p = 0.000$, in which smaller than $\alpha = 0.05$. It could be concluded that there were differences in the attitudes of mothers regarding complications of pregnancy and childbirth before and after being provided with leaflet intervention of MCH handbook modification. Bivariate analysis was performed in the control group to determine differences in knowledge and attitudes about pregnancy complications before and after being provided with MCH handbook. The results of the bivariate analysis using the Wilcoxon test are as follows:

Table 1: Analysis of differences in knowledge and attitudes before and after the leaflet intervention at Sayang Rakyat Hospital in 2020

Variable	Test results	
	Z	p
Knowledge	Pretest-posttest - 4.547	0.000
Attitude	Pretest-posttest - 4.714	0.000

In Table 2, with the results of the Wilcoxon signed ranks test, knowledge variable obtained $p = 0.000$ that was smaller than $\alpha = 0.05$. It could be concluded that there were differences in maternal knowledge about complications of pregnancy and childbirth before and after the control group who was only provided with the MCH handbook.

Table 2: Analysis of differences in knowledge and attitudes before and after being provided with MCH handbook at Sayang Rakyat Hospital in 2020

Variable	Test results	
	Z	p
Knowledge	Pretest-posttest - 3.857	0.000
Attitude	Pretest-posttest - 3.163	0.002

Statistical test results on attitude obtained $p = 0.002$ that was smaller than $\alpha = 0.05$. It could be concluded that there were differences in the attitudes of pregnant women regarding complications of pregnancy and childbirth before and after the control group who was only provided with MCH handbook. To determine the differences in knowledge and attitudes between the intervention group and the control group, two analyses were conducted by comparing knowledge and attitudes between the intervention and control groups before (pre-test) and after (post-test) the intervention. The results of the analysis can be seen in Table 3:

Table 3: Analysis of differences in knowledge and attitudes before and after being provided with MCH handbook at Sayang Rakyat Hospital in 2020

Variable	Test results		
	Z	Sig	
Knowledge	Pre-test	- 1.789	0.074
	Post-test	- 2.048	0.041
Attitudes	Pre-test	- 2.399	0.016
	Post-test	- 3.451	0.001

Based on Table 3 using the Mann–Whitney test, it showed that the comparison of knowledge between the intervention and control groups before

the intervention obtained $p = 0.074$. This was >0.05 which meant the intervention and control groups had no difference in knowledge. Whereas after the intervention, the comparison of knowledge between the intervention and control groups obtained $p = 0.041$. This was smaller than 0.05 which meant the intervention and control groups had differences in knowledge.

The comparison analysis results of attitudes between the intervention and control groups before the intervention obtained $p = 0.016$. This was smaller than 0.05 which meant the intervention and control groups had differences in attitudes. After the intervention, the results of attitudes comparison between the intervention and control groups obtained $p = 0.001$. This was smaller than 0.05 which meant the intervention and control groups had differences in attitudes.

Discussion

Leaflet is media of delivering health information through folded sheets. Leaflet is a publication media in the form of paper sheet with a certain size, can be folded (generally, 2–3 folds) or not. The advantages of using this media, including the target, could adjust as well as learned independently and practically because it reduced the need to take notes. The target also could see the contents while relaxed, it was very economical and provided detailed information that was not provided verbally.

The results of knowledge comparative analysis before and after the intervention with the Wilcoxon signed ranks test showed that there were significant differences in both the intervention group and the control group. Although each group had a significant increase in knowledge, the intervention group provided with leaflets had a greater increase in knowledge. For the knowledge comparative analysis between the intervention and control groups using Mann–Whitney test, significant results were obtained. By considering these two results, it can be concluded that the development of educational media in the form of leaflets had a positive effect in increasing pregnant women knowledge about complications of pregnancy and childbirth.

This research was in line with research conducted by Indrawati *et al.* [14] that there was a difference between the pre-counseling knowledge (leaflet) and post-counseling knowledge (leaflet) about increasing the knowledge of high-risk pregnant women with media-based counseling ($p = 0.000$). Similar to the research conducted by Fitriani *et al.* [10], it also showed that the average knowledge of pregnant women before and after being provided with health education about high-risk pregnancies in the experimental group showed $p = 0.000$. It meant that there was a significant difference between

the average knowledge of pregnant women before and after being provided with health education about high-risk pregnancies. Health education with leaflets had an effect on the level of pregnant women knowledge regarding healthy lifestyles during pregnancy [15]. In addition, the research conducted by Jannah *et al.* [16] also showed an increase in students' knowledge after being provided with a leaflet about dental caries.

Development of educational media through leaflets modification of the MCH Handbook was done by adding material in the form of high-risk pregnancy, ways to prevent high-risk pregnancies, and avoid high-risk pregnancies. Modified leaflets can help pregnant women to easily understand the complications of pregnancy and childbirth. In addition to the complete material, the targets could also adjust and learn independently and practically because it reduced the need to take notes, they could easily see the content, and various information could be read by target group members to be discussed together. Last, it could provide detailed information which was not provided verbally.

The results of attitude comparative analysis before and after the intervention using Wilcoxon Signed Ranks Test showed that there were significant differences in both intervention and control groups. Although the significant change in the attitude of each group occurred, on the intervention group with leaflets, they had a greater positive attitude than the control group. The results of attitude comparative analysis between the intervention and control groups using the Mann–Whitney test obtained significant results. By considering these two results, it can be concluded that the development of educational media in the form of leaflets had a positive effect on the changes in pregnant women attitudes about complications of pregnancy and childbirth.

This research was in line with the research conducted by Indrawati *et al.* [14] that there was a difference between pre-counseling attitudes (leaflets) and post-counseling attitudes (leaflets) about increasing attitudes of high-risk pregnant women with media-based counseling ($p = 0.000$). This research was also in line with the research conducted by Jannah *et al.* [16], in which there were differences in attitude before and after health education about dental caries with a $p = 0.0001$. Moreover, research conducted by Nurhasto *et al.* [17] about adolescents in Klaten showed that there was an effect of counseling about the dangers of free sex on adolescent attitudes. However, this research was actually different from the research conducted by Nurhamsyah *et al.* [18] that there was no effect of education on changes in student attitudes about the adolescent reproductive health triad.

Recommendation

It is expected that the development of educational media both modified leaflets and MCH handbook can be used as a reference and option in

providing health education regarding complications of pregnancy and childbirth to pregnant women in improving knowledge and attitudes at Sayang Rakyat Hospital in Makassar.

Further research is needed regarding the management of pregnancy complications with educational media using application so that they can increase their knowledge and attitudes further about handling the pregnancy and childbirth complications.

Conclusion

Educational media on knowledge and attitudes about complications of pregnancy and childbirth has a positive effect in pregnant women at Sayang Rakyat Hospital in Makassar.

References

- Hall JA, Benton L, Copas A, Stephenson J. Pregnancy intention and pregnancy outcome: Systematic review and meta-analysis. *Matern Child Health J.* 2017;21(3):670-704. <https://doi.org/10.1007/s10995-016-2237-0>
PMid:28093686
- Adekanle D, Adeyemi A, Dairo F. Ante-partum haemorrhage and pregnancy outcome in lautech teaching hospital, Southwestern Nigeria. *J Med Med Sci.* 2011;2(12):1243-7.
- Sudirman J, Sinrang AW, Marwang S, Nurlaily A, Sabar S, Astuti AT, et al. The analysis estradiol levels against sexual desire in perimenopause women in Makassar, South Sulawesi, Indonesia. *Enferm Clin.* 2020;30:350-3. <https://doi.org/10.1016/j.enfcli.2019.07.117>
PMid:32204184
- Woldeyes WS, Asefa D, Muleta G. Incidence and determinants of severe maternal outcome in Jimma University teaching hospital, South-West Ethiopia: A prospective cross-sectional study. *BMC Pregnancy Childbirth.* 2018;18(1):1-12. <https://doi.org/10.1186/s12884-018-1879-x>
PMid:29925329
- Nurhikmah SM, Tahir A, Stang, Suriah RT, Manyullei S. The roles of responsive and empathy of midwives in antenatal care visit of pregnant women in pangkep regency. *Interciencia J.* 2020;45(1):168-81.
- Alkema L, Chou D, Hogan D, Zhang S, Moller A, Gemmill A, et al. Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: A systematic analysis by the UN maternal mortality estimation inter-agency group. *Lancet.* 2016;387(10017):462-74. [https://doi.org/10.1016/s0140-6736\(15\)00838-7](https://doi.org/10.1016/s0140-6736(15)00838-7)
PMid:26584737
- Rekam Medik Rumah Sakit Umum Daerah Sayang Rakyat, Makassar; 2018.
- Ogu R, Orazulike N. Reducing maternal mortality: Awareness of danger signs in pregnancy. *Asian J Med Health.* 2017;6(1):1-8. <https://doi.org/10.9734/ajmah/2017/35022>
- Sudirman J, Sampara N, Mawang S, Passe R, Aswan R, Ahmad M. The analysis of reducing blood glucose levels of diabetics with diabetes mellitus by giving a secang wood stew (*Caesalpinia sappan* L.) to menopausal women in Makassar city. *Enferm Clin.* 2020;30(2):506-9. <https://doi.org/10.1016/j.enfcli.2019.07.148>
PMid:32204224
- Fitriani E, Uami S, Rahmalia S. Efektifitas pendidikan kesehatan tentang kehamilan resiko tinggi terhadap pengetahuan ibu hamil. *Jom Psik.* 2012;1(2):1-8.
- Amiruddin R, Palutturi S, Rahman SA. Increasing midwifery skill for pregnancy health care with amuntuli bija tianang na beja-beja model. *Indian J Public Health Res Dev.* 2018;9(9):364-8. <https://doi.org/10.5958/0976-5506.2018.01025.2>
- Mukhoirotin M, Rahmat I, Siswosudarmo R. Pengaruh pendidikan kesehatan terhadap kecemasan primigravida dalam menghadapi persalinan. *J Kesehatan Reprod.* 2015;1(3):166-74. <https://doi.org/10.22146/jkr.5747>
- Nurhikmah, Stang, Suriah, Abdullah T, Arundhana SM. The effect of counselling intervention during antenatal care on the knowledge and attitude about danger signs in pregnancy : A cross-sectional study in takalar regency. *J Pharm Nutr Sci.* 2020;10(2):1-5.
- Indrawati ND, Damayanti FN, Nurjanah S, Muhammadiyah U. Peningkatan pengetahuan dan sikap ibu hamil resiko tinggi dengan penyuluhan berbasis media. In: *Rakernas Aipkema.* 2016. p. 267-75. <https://doi.org/10.26714/jk.7.1.2018.69-79>
- Yusuf NN, Isnaeni Y. Pengaruh Pendidikan Kesehatan dengan Leaflet terhadap Tingkat Pengetahuan Ibu Hamil Mengenai Pola Hidup sehat Selama Kehamilan di Puskesmas Mergangsan, Sekolah Tinggi Ilmu Kesehatan Aisyiyah Yogyakarta; 2014. <https://doi.org/10.30989/mik.v6i1.172>
- Jannah Z, Kasjono HH, Kes M. Perbedaan Pengaruh Pendidikan Kesehatan Tentang Karies Gigi Melalui Media Buku Cerita Bergambar dan Leaflet terhadap Pengetahuan, Sikap, dan Perilaku Anak Sekolah Dasar di Kabupaten Malang, Muhammadiyah Surakarta; 2016. <https://doi.org/10.14710/jgi.3.1.121-125>
- Nurhasto IY, Wahyuningrum D, Handayani S. Pengaruh penyuluhan tentang bahaya seks bebas terhadap sikap remaja dalam seks bebas di SMA N I wedi klaten. *J Health Sci.* 2016;4(8):2-8. <https://doi.org/10.35874/jic.v2i1.51>
- Nurhamsyah D, Mendri NK, Wahyuningsih M. Pengaruh edukasi terhadap perubahan pengetahuan dan sikap mahasiswa tentang TRIAD kesehatan reproduksi remaja (KRR) di fakultas ilmu sosial dan ekonomi Universitas Respati. *J Keperawatan Respati.* 2017;2(2):67-83. <https://doi.org/10.24198/jkp.v5n1.1>



KEMENTERIAN PENDIDIKAN, KEBUDAYAAN
RISET, DAN TEKNOLOGI
UNIVERSITAS HASANUDDIN
FAKULTAS KESEHATAN MASYARAKAT

Jl. Perintis Kemerdekaan Km. 10 Makassar 90245, Telp. (0411) 585658,
E-mail : fkm.unhas@gmail.com, website: <https/fkm.unhas.ac.id/>

REKOMENDASI PERSETUJUAN ETIK

Nomor :3923/UN4.14.1/TP.01.02/2020

Tanggal: 27 Januari 2020

Dengan ini Menyatakan bahwa Protokol dan Dokumen yang Berhubungan dengan Protokol berikut ini telah mendapatkan Persetujuan Etik:

No.Protokol	17120105017	No. Sponsor Protokol	
Peneliti Utama	Prof. Dr. Stang, M.Kes	Sponsor	Pribadi
Judul Peneliti	<i>The Effect of Educational Media Development in Increasing Knowledge and Attitudes on Pregnancy Complications at Sayang Rakyat Hospital in Makassar</i>		
No.Versi Protokol	1	Tanggal Versi	17 Januari 2020
No.Versi PSP	1	Tanggal Versi	17 Januari 2020
Tempat Penelitian	Sayang Rakyat Hospital in Makassar		
Judul Review	<input type="checkbox"/> Exempted <input checked="" type="checkbox"/> Expedited <input type="checkbox"/> Fullboard	Masa Berlaku 27 Januari 2020 Sampai 27 Januari 2020	Frekuensi review lanjutan
Ketua Komisi Etik Penelitian	Nama: Prof.dr.Veni Hadju, M.Sc,Ph.D	Tanda tangan 	Masa Berlaku 27 Januari 2020
Sekretaris komisi Etik Penelitian	Nama: Nur Arifah,SKM,MA	Tanda tangan 	Masa Berlaku 27 Januari 2020

Kewajiban Peneliti Utama :

1. Menyerahkan Amandemen Protokol untuk persetujuan sebelum di implementasikan
2. Menyerahkan Laporan SAE ke Komisi Etik dalam 24 Jam dan dilengkapi dalam 7 hari dan Laporan SUSAR dalam 72 Jam setelah Peneliti Utama menerima laporan
3. Menyerahkan Laporan Kemajuan (progress report) setiap 6 bulan untuk penelitian resiko tinggi dan setiap setahun untuk penelitian resiko rendah
4. Menyerahkan laporan akhir setelah Penelitian berakhir
5. Melaporakn penyimpangan dari protocol yang disetujui (protocol deviation/violation)
6. Mematuhi semua peraturan yang ditentukan