



## Change in maternal intention and perception about postpartum care after provision a leaflet media in Bau Bau City<sup>☆</sup>



Suriah<sup>a,\*</sup>, Rezy Trisnayuni<sup>b</sup>, Masni<sup>c</sup>, Nasrah<sup>a</sup>

<sup>a</sup> Department of Health Promotion and Behavior Science, Faculty of Public Health, Hasanudin University, Indonesia

<sup>b</sup> Health Promotion, Post Graduate School, Faculty of Public Health, Hasanudin University, Indonesia

<sup>c</sup> Department of Biostatistics, Faculty of Public Health, Hasanudin University, Indonesia

Received 8 November 2019; accepted 2 June 2020

### KEYWORDS

Maternal perceptions;  
Intention;  
Leaflets;  
Postpartum care

### Abstract

**Objective:** Postpartum is the riskiest period of the pregnancy process. Treatment at this stage must be carried out until the puerperium is complete. Provision of health education about childbirth care is needed to improve maternal behavior, including through the provision of leaflets. This study aims to assess changes in maternal intentions and perceptions in postpartum care after giving leaflets. This research uses a quasi-experiment with One Group Time Series design. The study population was all pregnant women who examined their pregnancies from September to February 2019, totaling 131 pregnant women. The sample was determined using a purposive sampling method with 26 mothers selected. Data analysis using the Wilcoxon test and paired *t*-test.

**Results:** Intention and perception of maternal were change after giving leaflets. An increase can see the value of measurements ( $p=0.019$ ) of intentions and attitudes in pretest 2 to post-test 1. The repeated analysis of the first pretest for the third post-test also shows an increase in the measurement value ( $p=0.000$ ) toward the intention and perception after giving the leaflet.

**Conclusions:** There was a change in intention and positive perception and lasts a long time in pregnant women before and after the provision of leaflets about postpartum care. Changes in plans and positive opinions are significant in pregnant women with age groups 20–35 years and advanced education level. It is recommended that providers at the health center use leaflets as a companion to the Maternal and Child Health Book to educate pregnant women about postpartum care to improve maternal intentions and perceptions.

© 2020 Elsevier España, S.L.U. All rights reserved.

<sup>☆</sup> Peer-review under responsibility of the scientific committee of the 4th International Conference Hospital Administration (ICHA4). Full-text and the content of it is under responsibility of authors of the article.

\* Corresponding author.

E-mail address: [suriah\\_74@yahoo.com](mailto:suriah_74@yahoo.com) ( Suriah).

## Introduction

The postpartum period is the hardest time for a mother; there are two things that become the main concern, namely the physical condition that is still weak and the psychological condition that must be ready to play a new role as a mother. Most maternal and infant deaths occur during this time.

According to a World Health Organization (WHO) report in 2017, maternal mortality is estimated to be 1 in 190 live births.<sup>1</sup> Data from the Ministry of Health of the Republic of Indonesia in 2015 shows that of 100,000 live births in Indonesia, 305 of them ended in maternal deaths. Bleeding is the leading cause of maternal death worldwide. More than two-thirds of reported bleeding deaths are categorized as postpartum hemorrhage.<sup>2</sup>

Proper postpartum care allows mothers to adapt physically and psychologically to reduce the high morbidity and mortality rates in mothers. Postpartum care ensures that mothers and babies receive care such as breastfeeding services, family planning services, and observing signs of danger seen in mother and child. However, the postpartum phase is the most neglected for providing quality services.<sup>3</sup>

Postpartum services show a serious weakness. Care for the baby is given more attention while the mother's care is sometimes neglected even though the mother who has just given birth needs the care to restore her physical condition so that she can care for her child properly. Research conducted in the Rich health district of Burkina Faso shows that, overall, 52% of mothers did not receive postpartum care, but 47% of them still received baby care.<sup>4</sup>

Nationally in Indonesia, access to postpartum care services by 37.0% increased from 32.1% in 2013 to 2018.<sup>5</sup> Regionally in Southeast Sulawesi Province has decreased from 2013 to 2018 to under 30% which makes this province ranked fourth Lowest.<sup>6</sup>

The mother's behavior is undergoing treatment is influenced by many factors, such as intention and perception. Likewise, in terms of determining maternal care in the postpartum period, the intentions and perceptions of mothers who feel healthy, the poor quality of care in facilities and out of stock of drugs become an obstacle in the utilization of postpartum care.<sup>7</sup>

The utilization of postpartum services in Southeast Sulawesi Province in the period 2013–2018 has not reached the expected target. Katobengke health center has the lowest postpartum service coverage. Postpartum visits were consistently low from the first puerperal visit (54.6%) to the third puerperal visit (35.5%).<sup>6</sup>

Changes in intentions and positive perceptions of postpartum care in pregnant women can be done through providing information. Providing information requires media, leaflets, as one of the simple educational media, can be an alternative way to spread information. The use of leaflets in influencing maternal behavior in postpartum care has the same effectiveness as other media or methods.<sup>8</sup>

A preliminary study conducted by interviewing one of the midwives who served at the Katobengke Bau-Bau health center found that there were no media whatsoever used in providing education or counseling in postpartum care. There has been a book on Maternal and Child Health issued by the Ministry of Health containing health information about

**Table 1** Frequency distribution of respondents by demographic characteristics.

Demographic characteristics	N	%
<i>Years</i>		
20–35	24	92.3
≥35	2	7.7
Total	26	100.0
<i>Education</i>		
Elementary	2	7.7
Junior High School	7	26.9
Senior High School	9	34.6
Undergraduate	8	30.8
Total	26	100.0

postpartum. However, the book is not used maximally by mothers and health workers.

## Method

This study uses an intervention study in the form of a quasi-experimental design with a time-series design. This design is a measurement that is repeated both before and after the intervention. Pretest and post-test in this study were carried out repeatedly to find out the stability of the research subjects. The pretest and post-test were each given a distance between measurements for one week except for the second post-test. The second post-test was held three weeks after the first post-test to see how long the information was deposited. This research was conducted in April to July 2019 with the target of pregnant women in the third trimester of 26 people.

## Result

### Analysis of the demographic characteristics of respondents

A descriptive analysis of the respondents' demographic characteristics showed that most respondents in the age group of 20–35 years were 92.3%. The education level of the majority of respondents was high school (34.6%). This can be seen in [Table 1](#).

### Analysis of the intentions and perceptions of pregnant women toward postpartum care

The pretest and post-test analysis results showed intention scores before the intervention obtained fluctuating scores and after the response tended to be stable. The lowest average rating is at the first pretest (36.50) and the highest at the first post-test (39.81). The lowest minimum score on the third pretest and the highest minimum score on the first post-test (37). While the maximum score obtained is a stable score from all measurements.

In the perception variable, the average rating fluctuates both before the intervention and after the intervention. The lowest average score is at the first pretest (30.08) and the

**Table 2** Descriptive analysis of intentions and perceptions of pregnant women toward postpartum care through leaflet interventions.

Variable	Measurement	Min	Max	Mean	Std. deviation
Intentions	Pretest 1	15	40	36.50	5.880
	Pretest 2	24	40	38.12	3.615
	Pretest 3	13	40	37.65	5.592
	Posttest 1	37	40	39.81	0.694
	Posttest 2	36	40	39.73	0.874
	Posttest 3	27	40	39.15	2.767
Perceptions	Pretest 1	22	40	30.08	4.029
	Pretest 2	26	39	31.38	3.163
	Pretest 3	27	37	31.12	2.732
	Posttest 1	31	40	35.92	2.770
	Posttest 2	31	40	35.62	2.699
	Posttest 3	25	40	34.65	3.298

highest at the first post-test (35.92). The lowest minimum score is in the first pretest (22) and the highest in the first post-test and the second post-test with a score of 31. The maximum score decreases before the intervention and is stable with a score of 40 after the intervention. The details can be seen in [Table 2](#).

### Analysis of differences in the intentions and perceptions of pregnant women toward postpartum care

The difference before and after the intervention is made by comparing the test results in the second pretest and the test results in the first post-test because both have the highest average score. The duration of effect of giving leaflets on changes in the respondents' intention and perception of postpartum care can be determined by comparing the results of the test at the first pretest and the results of the test at the third post-test.

Statistical test results according to [Table 3](#) show that on the intention variable, there is an increase in the value before and after the intervention according to the results of the measurement of the second pretest and the first post-test ( $p=0.03 < 0.05$ ) meaning that there is an effect of giving leaflets to positive changes in intention. In repeated measurements shown in the first pretest and third post-test, there is an increase ( $p=0.008 < 0.005$ ), meaning that there is a change in intention and persists for a long time.

In the perception variable, it is obtained that there are differences before and after the intervention, according to the increase in the results of the second pretest and first post-test ( $p=0.019 < 0.05$ ). Measurements repeated at the first pretest and third post-test, there is a change ( $p=0.000$ ), meaning that there is an influence of giving leaflets on perception and lasting. Differences in intentions and opinions before and after the intervention are presented in [Table 3](#).

**Table 3** Differences in the intentions and perception of pregnant women toward postpartum care through the provision of leaflets in the Katobengke health center area.

Variable	p-value
<i>Intentions</i>	
Pretest 1–pretest 2	0.023*
Pretest 1–pretest 3	0.115*
Pretest 2–pretest 3	0.975*
Posttest 1–posttest2	0.157*
Posttest 1–posttest 3	0.109*
Posttest 2–posttest 3	0.180*
Pretest 2–posttest 1	0.003*
Pretest 1–posttest 3	0.008*
<i>Perceptions</i>	
Pretest 1–pretest 2	0.025**
Pretest 1–pretest 3	0.222**
Pretest 2–pretest 3	0.568**
Posttest 1–posttest 2	0.058**
Posttest 1–posttest 3	0.053**
Posttest 2–posttest 3	0.003**
Pretest 2–posttest 1	0.019**
Pretest 1–posttest 3	0.000**

\* Wilcoxon rank test.

\*\* Paired *t*-test.

**Table 4** Effect of giving leaflets on intention and perception based on characteristics of respondents.

Characteristics of respondents	p-value	
	Intentions	Perceptions
<i>Age (years)</i>		
20–35	0.005*	0.000**
>35	0.317*	0.070**
<i>Education</i>		
Elementary	0.317*	0.111**
Junior High School	0.180*	0.006**
Senior High School	0.039*	0.031**
Undergraduate	0.109*	0.001**

\* Wilcoxon rank test.

\*\* Paired *t*-test.

### Analysis of the effect of giving leaflets on intention and perception based on respondent characteristics

Analysis of the effect of giving leaflets on changes in respondents' perceptions and intentions based on the characteristics of the age and education level of the respondents was carried out using the highest average scores from the measurement results before and after the intervention, namely the second pretest and first post-test. The details can be seen in [Table 4](#).

Based on the age category, the statistical test shows that there is an effect of giving leaflets to the intention variable ( $p=0.005$ ) and perception ( $p=0.000$ ) with the age category 20–35 years. At the education level, it shows that giving leaflets only affects the intention of respondents with a

high school education level ( $p = 0.039$ ) while for perception, leaflet giving has more influence on respondents with junior high school education level ( $p = 0.006$ ), senior high school ( $p = 0.031$ ), and undergraduate level ( $p = 0.01$ ).

## Discussion

The postpartum period is the riskiest in the pregnancy process; about 60% of maternal deaths occur during the postpartum period. The problem from the past until now is the awareness of mothers in conducting postpartum care and is not consistent with the continuity of care performed.<sup>9,10</sup> Support is needed in the form of education and assurance that the availability of information is sufficient to encourage intentions and positive perceptions in accessing postpartum care. One way to provide information support is through health education through leaflet media.

The advantages of leaflets are that they are comfortable, inexpensive, and can be stored for a long time to read again. Leaflets are an effective choice in ensuring the availability of information for mothers.<sup>11</sup> Interventions in giving leaflets to pregnant women in this study affect positive changes in intention and perception in postpartum care.

One's behavior is generally preceded by an intention that describes one element of a person's behavior.<sup>12,13</sup> The stronger the intention, the higher the chance for the behavior to occur. However, in the process of forming behavior, intentions can change at any time, where this is influenced by various factors such as the availability of information.

This research shows that giving leaflets can strengthen the intention of mothers in conducting postpartum care. After giving the leaflet, there is an intention that appears and lasts sometime after the intervention is carried out.

Research in line with this study, conducted on 161 pregnant women in the practice of antenatal perineum massage obtained results that the level of intention to perform massage treatments was higher in the target group leaflet (31.3%) while in the smartphone website group was 29.6%.<sup>14</sup> Other studies have concluded that counseling and leaflets given in the prenatal period increase awareness of women to use modern postpartum contraceptive treatment methods. The most important thing is to provide enough education and information to contribute to the mother's intention to perform postpartum care including contraception.<sup>8</sup>

One factor related to the use of post-natal care is the age of the mother during childbirth.<sup>15</sup> One factor related to the use of post-natal care is the age of the mother during childbirth.<sup>15</sup> Mothers aged 20–35 years are more likely to have strong intentions because it is associated with a productive period in a woman's reproductive phase. It can be assumed that a mother at the age of <35 years is more prepared to welcome the process of pregnancy than mothers with age >35 years. Therefore, they have more intention to carry out postpartum care.

There is a relationship between recent education to carry out postpartum visits, a high level of education that supports the reception of appropriate information.<sup>16</sup> The level of education is correlated with the process of internalizing information, as this study shows that there is an influence on the provision of leaflets on the intention of respondents with advanced education levels ( $p < 0.05$ ).

The domain of behavior is not the only intention but also perception; the two domains are closely related to the formation of behavior. Women's perception of the quality of maternal care is influenced by the data collected. An opinion is a form of understanding of information obtained that forms a belief in individuals to have postpartum care. The provision of clear and appropriate information by health workers is the right way to change the wrong perception that mothers have.<sup>17</sup>

Giving leaflets can improve and change the perception of mothers to be positive in postpartum care. Changes in maternal perceptions after leaflets are in line with research conducted in Bangladesh, which proves that the use of Asma's story leaflets has an impact on postpartum women's perceptions of contraceptive.<sup>18</sup>

The perception of the seriousness of health problems that influence where mothers will postpartum care. Leaflet interventions affect maternal perceptions about the selection of postpartum services that will be used at the time of delivery. Through education and providing health information, behavioral change interventions will help change the conservative perceptions of modern midwives by pregnant women.<sup>19</sup>

The process of receiving, selecting, and interpreting information in the formation of perceptions is subjective. Demographic factors will play a role in shaping the perception of performing health care.

As found in this study, there was an effect of giving leaflets about postpartum care to mothers' perceptions of the respondents' age and education level. The results of this study indicate that respondents in the age group 20–35 have a more positive perception. The perception of the selection of postpartum services is related to the beliefs and personal experiences of the mother.<sup>19</sup> This is similar to the intention. At this age, it is generally the first experience of giving birth so that no personal experience can give rise to negative perceptions. At this age, a woman will receive all the information obtained and will affect her perception of treatment. The right information will form a positive perception.

The intention and perception are both related to the level of further education. The higher the education level of respondents, the better the intention and perception about postpartum care after giving leaflets. Education is related to maturity in thinking and responding to any information that is around it. Perceptions about the need for postnatal care services are positively correlated with maternal education.<sup>20</sup>

## Conclusion

The research found that there was a change in intention and positive perception and lasted a long time in pregnant women before and after giving leaflets about postpartum care. Changes in intentions and positive perceptions are greater in pregnant women with age groups 20–35 years and advanced education level.

## Conflict of interest

The authors declare no conflict of interest.

## References

1. World Health Organization. Maternal mortality: level and trends 2000 to 2017; 2019 <https://www.who.int/reproductivehealth/publications/maternal-mortality-2000-2017/en/>
2. Say L, Chou D, Gemmill A, Tunçalp Ö, Moller A, Daniels J, et al. Global causes of maternal death: a WHO systematic analysis. *Lancet Glob Heal*. 2014;2:323–33, [http://dx.doi.org/10.1016/S2214-109X\(14\)70227-X](http://dx.doi.org/10.1016/S2214-109X(14)70227-X).
3. WHO. Postnatal care of the mother and newborn 2013. World Health Organization; 2013. p. 1–72. ISBN: 9789241506649.
4. Yugbaré Belemsaga D, Bado A, Goujon A, Duysburgh E, Degomme O, Kouanda S, et al. A cross-sectional mixed study of the opportunity to improve maternal postpartum care in reproductive, maternal, newborn, and child health services in the Kaya health district of Burkina Faso. *Int J Gynaecol Obstet*. 2016;135:S20–6, <http://dx.doi.org/10.1016/j.ijgo.2016.08.005>.
5. RISKESDAS. HASIL UTAMA RISKESDAS 2018 Kesehatan. 2018:20–21. [http://www.depkes.go.id/resources/download/info-terkini/materi\\_rakorpop\\_2018/Hasil\\_Riskesdas\\_2018.pdf](http://www.depkes.go.id/resources/download/info-terkini/materi_rakorpop_2018/Hasil_Riskesdas_2018.pdf).
6. Dinas Kesehatan Provinsi Sulawesi Tenggara. Profil Kesehatan Sulawesi Tenggara Tahun 2017; 2018.
7. Edu BC, Agan TU, Monjok E, Makowiecka K. Effect of free maternal health care program on health-seeking behaviour of women during pregnancy, intra-partum and postpartum periods in cross river state of Nigeria: a mixed method study. *Maced J Med Sci*. 2017, <http://dx.doi.org/10.3889/oamjms.2017.075>.
8. Akman M, Tüzün S, Uzuner A, Başgul A, Kavak Z. The influence of prenatal counselling on postpartum contraceptive choice. *J Int Med Res*. 2010;38:1243–9, <http://dx.doi.org/10.1177/147323001003800405>.
9. Kleppel L, Suplee PD, Stuebe AM, Bingham D. National initiatives to improve systems for postpartum care. *Matern Child Health J*. 2016;20:66–70, <http://dx.doi.org/10.1007/s10995-016-2171-1>.
10. Wilcox A, Levi EE, Garrett JM. Predictors of non-attendance to the postpartum follow-up visit. *Matern Child Health J*. 2016;20:22–7, <http://dx.doi.org/10.1007/s10995-016-2184-9>.
11. Wagner T, Stark M, Milenkov AR. What about mom? Health literacy and maternal mortality. *J Consum Health Internet*. 2020;24:50–61, <http://dx.doi.org/10.1080/15398285.2019.1710980>.
12. Notoatmodjo S. Promosi Kesehatan Dan Perilaku Kesehatan. Jakarta: Rineka Cipta; 2012.
13. Ajzen I, Fishbein M. *Understanding attitudes and predicting social behavior*. New Jersey: Prentice Hall; 1975.
14. Takeuchi S, Horiuchi S. Randomised controlled trial using smart-phone website vs leaflet to support antenatal perineal massage practice for pregnant women. *Women Birth*. 2016;29:430–5, <http://dx.doi.org/10.1016/j.wombi.2016.01.010>.
15. Akunga D, Menya D, Kabue M. Determinants of postnatal care use in Kenya. *Afr Popul Stud*. 2014;28, <http://dx.doi.org/10.11564/28-3-638>.
16. Tri Pinaringsih, Emmy Riyanti AK. Faktor-Faktor Yang Berhubungan Dengan Niat Kunjungan Ibu Nifas Ke Pelayanan Kesehatan Di Wilayah Kerja Puskesmas Tlogosari Kulon Kota Semarang. *J Kesehat Masy*. 2017;5:653–60.
17. Liu N, Mao L, Sun X, Liu L, Yao P, Chen B. The effect of health and nutrition education intervention on women's postpartum beliefs and practices: a randomized controlled trial. *BMC Public Health*. 2009;9, <http://dx.doi.org/10.1186/1471-2458-9-45>.
18. Cooper CM, Ahmed S, Winch PJ, Pfitzer A, McKaig C, Baqui AH. Findings from the use of a narrative story and leaflet to influence shifts along the behavior change continuum toward postpartum contraceptive uptake in Sylhet District, Bangladesh. *Patient Educ Couns*. 2014;97:376–82, <http://dx.doi.org/10.1016/j.pec.2014.09.007>.
19. Peprah P, Mawuli Abalo E, Nyonyo J, Okwei R, Agyemang-Duah W, Amankwa G. Pregnant women's perception and attitudes toward modern and traditional midwives and the perceptual impact on health seeking behaviour and status in rural Ghana. *Int J Africa Nurs Sci*. 2018;8:66–74, <http://dx.doi.org/10.1016/j.ijans.2018.03.003>.
20. Angore BN, Tufa EG, Bisetegen FS. Determinants of postnatal care utilization in urban community among women in Debre Birhan Town, Northern Shewa, Ethiopia. *J Health Popul Nutr*. 2018;37:1–9, <http://dx.doi.org/10.1186/s41043-018-0140-6>.