

An Early Stage Evaluation of the Supporting Program for Obstetric Care Underserved Areas in Korea

Baeg Ju Na,¹ Hyun Joo Kim,²
and Jin Yong Lee³

¹Department of Preventive Medicine, College of Medicine, ²Department of Public Health, The Graduate School, Konyang University, Daejeon; ³Public Health Medical Service, Seoul National University Boramae Medical Center, Seoul, Korea

Received: 15 March 2014

Accepted: 10 April 2014

Address for Correspondence:

Jin Yong Lee, MD

Public Health Medical Service, Seoul National University Boramae Medical Center, 20 Boramae-ro 5-gil, Dongjak-gu, Seoul 156-707, Korea
Tel: +82.2-870-2165, Fax: +82.2-831-0714
E-mail: jylee2000@gmail.com

This study was supported by the Ministry of Health and Welfare in Korea (2012; 091-2700-2743-304-260).

"The Supporting Program for Obstetric Care Underserved Areas (SPOU)" provides financial aids to rural community (or district) hospitals to reopen prenatal care and delivery services for regions without obstetrics and gynecology clinics or hospitals. The purpose of this study was to evaluate the early stage effect of the SPOU program. The proportion of the number of birth through SPOU was calculated by each region. Also survey was conducted to investigate the extent of overall satisfaction, elements of dissatisfaction, and suggestions for improvement of the program; 209 subjects participated from 7 to 12 December, 2012. Overall, 20% of pregnant women in Youngdong (71 cases) and Gangjin (106 cases) used their community (or district) hospitals through the SPOU whereas Yecheon (23 cases) was 8%; their satisfaction rates were high. Short distance and easy accessibility was the main reason among women choosing community (or district) hospital whereas the reasons of not selecting the community (or district) hospital were favor of the outside hospital's facility, system, and trust in the medical staffs. The SPOU seems to be currently effective at an early stage. However, to successfully implement this program, the government should make continuous efforts to recruit highly qualified medical staffs and improve medical facility and equipment.

Keywords: Medically Underserved Area; Prenatal Care; Delivery, Obstetric; Hospitals, Community; Financing, Government

INTRODUCTION

It is important for pregnant women to get prenatal care and delivery services in their community. If care is available in their community, check-ups would be available on a regular basis for pregnant women; and in case of an emergency situation, quick response would be on hand (1-4). Nevertheless, as of June 2011, there were 54 administrative districts in Korea which had no obstetrics and gynecology (OBGY) clinics or hospitals providing prenatal care and delivery services (5). The more serious problem is that these regions were mostly rural areas therefore mothers have to travel outside their community to receive care (6-7).

The number of healthcare institutions which provide delivery service reduced from 1,311 in 2004 to 808 in 2010 (5). This was because of decreasing number of birth and the situation has been more worsening especially in rural areas (6-7). Insufficient prenatal care can increase the possibility of stillbirth, perinatal mortality, low birth weight, premature babies and can also raise obstetric complications and maternal mortality (4, 8-15). Therefore it is important for pregnant women to be able to receive prenatal care and delivery services in their community. This problem is being confronted not only in Korea, but also in Western countries such as Canada and the US. To deal with this problem, health authorities of these countries set up a

policy to support healthcare institutions in rural areas and also training family medicine doctors and general practitioners to give prenatal care and delivery services (16).

The Korean Government recognized the seriousness of this problem; and in July 2011, "The Supporting Program for Obstetric Care Underserved Areas" (SPOU) was launched in three administrative districts including Youngdong, Yecheon, and Gangjin. The SPOU is a demonstration program which supports healthcare institutions in areas with no OBGY clinics or hospitals by the means of giving financial aids to restart or newly provide prenatal care and delivery services (5). Therefore, in theory, pregnant women do not need to go outside the district to receive prenatal care and delivery services. Also, additional costs such as time and transportation costs do not need to pay. The SPOU's most significant feature is that the aids are not only used for medical equipment and facility but they are also further used for operational costs as well as personnel expenses for medical doctors and registered nurses (5). From the government's point of view, if the SPOU is successfully settled, they can apply this policy to reduce the number of obstetrically underserved areas. Even though, the implementing period of the SPOU has only been over a year as of December 2012, early stage evaluation for this program is important in order to determine whether the program is operating well or if there are any

problems.

The purpose of this study was to investigate how many pregnant women gave birth in their district through the program, the elements of their satisfaction and dissatisfaction, suggestions for improvement of the program, and reasons why some pregnant women still went out of their district for prenatal care and delivery services.

MATERIAL AND METHODS

Study population

For a year, from August 1 2011 to July 31 2012, there were 318 women living in Youngdong who gave birth, 281 in Yecheon, and 517 in Gangjin. The officers working in each district office phone called to ask if each subject had the intention to give consent to participate in this study. Finally, 209 subjects took part in this study; 84 (Youngdong), 60 (Yecheon), and 65 (Gangjin). The survey was conducted by Gallup Korea, a specialized polling company, from December 7 to 12 2012 for 6 days using a structured questionnaire.

Questionnaire

The authors developed a questionnaire based on four categories. The first category included the item regarding general characteristics, second category was reasons for participating and not participating for SPOU, third category contained elements of satisfaction and dissatisfaction, and last category was awareness of SPOU. Table 1 shows the detailed information of the questionnaire (Table 1).

Statistical analysis

Using SPSS Win 18.0K program (IBM, Chicago, IL, USA), frequencies and their percentages were calculated by each ques-

tionnaire. Currency was presented not only Korean won (KRW) but also the United States dollar (USD), with an exchange rate of 1 USD equal to 1,151.8 KRW (average annual rate in 2011).

Ethics approval

The institutional review board of Konyang University Hospital (IRB No. 13-26) approved this study.

RESULTS

General Characteristics of Study Participants

In Youngdong, there were 318 women who gave birth in total; 71 (22.3%) women gave birth in the district and 247 (77.7%) women gave birth outside the district. Of the 71 women who gave birth in the district, 39 (54.9%) women answered to the questionnaire; Of the 247 women who gave birth outside the district, 45 (18.2%) women answered to the questionnaire. The average age were 30-35 yr (50.0%), and mostly were giving birth to their second child (47.6%). They mostly lived downtown (67.9%), the average education of these women were high school (48.8%), and the average monthly income was 200-300 thousand KRW (USD 1,736-2,605) (36.9%).

In Yecheon, there were 218 women who gave birth in total; 23 (8.2%) women gave birth in the district and 258 (91.8%) women gave birth outside the district. Of the 23 women who gave birth in the district, 6 (26.1%) women answered to the questionnaire; from the 258 women who gave birth outside the district, 54 (20.9%) women answered to the questionnaire. The average age were 30-35 yr (58.3%), and mostly were giving birth to their first child (43.3%). Most of them lived downtown (60.0%); the average education of these women were university (70.0%), and the average monthly income was 200-300 thousand KRW (USD 1,736-2,605) (36.7%).

Table 1. The summary of the questionnaire

Categories	Variable or question
General Characteristics	Age Number of children Residential area Education level Average monthly income
Reasons for selecting the particular institution and intentions to re-use the same institution	Reasons for selecting the particular institution Reasons for not select the inside community (or district) hospitals Intentions to re-use the same institution
Overall and sub-categorical satisfaction rates and suggestions for improvement in hospitals	Overall satisfaction Medical equipment Medical services Medical staff's kindness Facilities and Environment Suggestions for improvement in hospitals
Awareness and attitude of "The supporting program for obstetric care underserved areas (SPOU)"	Do you know your community (or district) hospital is participating SPOU program? Which is the most important additional support for hospital with SPOU? If improvements you suggested were made in the hospitals inside your districts, would you use the hospital for your next pregnancy? What is your position about SPOU program?

In Gangjin, there were 517 women who gave birth in total; 106 (20.5%) women gave birth in the district and 411 (79.5%) women gave birth outside the district. From the 106 women who gave birth in the district, 40 (37.7%) women answered to the questionnaire; from the 411 women who gave birth outside the district, 25 (6.1%) women answered to the questionnaire. The average age were 30-35 yr (38.5%), and mostly were giving birth to their second child (36.9%). They mostly lived downtown (50.8%); the average education of these women were higher than university (50.8%), and the average monthly income was 200-300 thousand KRW (29.2%) (USD 1,736-2,605) (Table 2).

Reasons for selecting the particular institution and intentions to re-use the same institution

We asked participants why they selected the particular institution for giving birth. For those whom gave birth in their district, the most common reason was because of the short distance and easy accessibility (Youngdong 94.9%; Yecheon 83.3%; and Gangjin 82.5%). For those whom gave birth outside their district, the most common reason was quite different by each area; Youngdong, good facility and familiar system in the outside hospital (26.7%); Yecheon, confidence in medical doctors (42.6%); and Gangjin, the short distance and easy accessibility (24.0%). For only women whom went outside the district, we asked the reasons why they did not select the inside community (or district) hospital; women in Youngdong (40.0%) and Gangjin (24.0%)

answered they were unable to trust the medical staffs (doctors and nurses) while women in Yecheon (33.3%) answered that they did not realize the presence of SPOU program in their area. For women whom gave birth in their district, the majority answered that they would re-use the same hospital if they got pregnant again, and the results were the same for women who gave birth outside their district (Table 3).

Overall and sub-categorical satisfaction rates and suggestions for improvement in hospitals

For those who utilized hospitals in their district, the overall satisfaction rates (the sum of response from very satisfied + satisfied) were high; Youngdong 92.3%, Yecheon 100%, and Gangjin 87.5%. The satisfaction for sub-categories including medical equipment, medical services, and medical staff's kindness were also highly rated. We further asked their opinions on improvement of the community (or district) hospital. Women in Youngdong suggested the need for improvement in medical facility and medical equipment such as ultrasonography (25.6%) whereas women in Gangjin picked up the need for improvement in medical facility (35.0%) (Table 4).

Awareness of and attitude to "The supporting program for obstetric care underserved areas"

Women were asked if they knew that the hospital they gave birth in was being supported by "The supporting program for obstet-

Table 2. General characteristics of study participants

Variables		Youngdong	Yecheon	Gangjin
Total number of birth	Total	318 (100)	281 (100)	517 (100)
	In-district	71 (22.3)	23 (8.2)	106 (20.5)
	Out of district	247 (77.7)	258 (91.8)	411 (79.5)
Number of respondents	Total	84 (100)	60 (100)	65 (100)
	In-district	39 (54.9)	6 (26.1)	40 (37.7)
	Out of district	45 (18.2)	54 (20.9)	25 (6.1)
Age	Under 30 yr	18 (21.4)	15 (25.0)	17 (26.2)
	30-35 yr	42 (50.0)	35 (58.3)	25 (38.5)
	35-40 yr	23 (27.4)	6 (10.0)	20 (30.8)
	More than 40 yr	1 (1.2)	4 (6.7)	3 (4.6)
Number of children	1	18 (21.4)	26 (43.3)	19 (29.2)
	2	40 (47.6)	24 (40.0)	24 (36.9)
	3	18 (21.4)	9 (15.0)	15 (23.1)
	More than 4	8 (9.5)	1 (1.7)	7 (10.8)
	Residential area	Rural Downtown (Eup)	57 (67.9)	36 (60.0)
Rural village (Myeon)		26 (31.0)	16 (26.7)	32 (49.2)
Urban (dong)		1 (1.2)	8 (13.3)	0
Education level	Middle school	3 (3.6)	1 (1.7)	1 (1.5)
	High school	41 (48.8)	17 (28.3)	29 (44.6)
	More than College graduates	40 (47.6)	42 (70.0)	33 (50.8)
	No answer	-	-	2 (3.1)
Average monthly income	Less than 2,000 thousand KRW (USD < 1,736)	23 (27.4)	4 (6.7)	14 (21.5)
	2,000-3,000 thousand KRW (USD 1,736-2,605)	31 (36.9)	22 (36.7)	19 (29.2)
	3,000-4,000 thousand KRW (USD 2,605-3,473)	11 (13.1)	13 (21.7)	18 (27.7)
	4,000-5,000 thousand KRW (USD 3,473-4,341)	6 (7.1)	10 (16.7)	5 (7.7)
	More than 5,000 thousand KRW (USD > 4,341)	9 (10.7)	9 (15.0)	2 (3.1)
	No answer	4 (4.8)	2 (3.3)	7 (0.8)

1 USD = 1,151.8 KRW (Korean Won).

Table 3. Reasons for selecting the particular institution and intentions to re-use the same institution

Unit: persons (%)

Questionnaire	Youngdong		Yecheon		Gangjin		
	In-district	Out of district	In-district	Out of district	In-district	Out of district	
Total number of respondents	39 (100)	45 (100)	6 (100)	54 (100)	40 (100)	25 (100)	
Reasons for selecting the particular institution*	Short distance/easy accessibility	37 (94.9)	9 (20.0)	5 (83.3)	15 (27.8)	33 (82.5)	6 (24.0)
	Low medical cost	9 (23.1)	1 (2.2)	0	1 (1.9)	0	0
	Trust in medical staffs	9 (23.1)	10 (22.2)	0	23 (42.6)	3 (7.5)	2 (8.0)
	Satisfaction with hospital facilities and system	5 (12.8)	12 (26.7)	0	22 (40.7)	10 (25.0)	3 (12.0)
	Kindness of medical staff	8 (20.5)	11 (24.4)	1 (16.7)	2 (3.7)	3 (7.8)	1 (4.0)
	Convenience in postpartum care and check-up	0	4 (8.9)	1 (16.7)	11 (20.4)	0	2 (8.0)
	Because of high-risk mother	1 (2.6)	6 (13.3)	0	3 (5.6)	2 (5.0)	2 (8.0)
	Postpartum care centers is affiliated in the hospital	0	0	0	0	0	0
	There is no another hospital in the area	0	0	0	0	0	2 (8.0)
	Others	1 (2.6)	2 (4.4)	0	5 (9.3)	4 (10.0)	8 (32.0)
Reasons of not selecting the inside community (or district) hospital*†	Distrust in medical staffs (doctors and nurses)	-	18 (40.0)	-	14 (25.9)	-	6 (24.0)
	Do not know the delivery is available in the hospital	-	2 (4.4)	-	18 (33.3)	-	2 (8.0)
	Distrust in case of emergency situations	-	12 (26.7)	-	6 (11.1)	-	1 (4.0)
	Dissatisfaction with hospital facility	-	3 (6.7)	-	13 (24.1)	-	1 (4.0)
	Close to parent's home	-	6 (13.3)	-	8 (14.8)	-	1 (4.0)
	Previously attended the hospital	-	3 (6.7)	-	2 (3.7)	-	3 (12.0)
	Lack of postpartum care centers	-	3 (6.7)	-	3 (5.6)	-	1 (4.0)
	Dissatisfaction with medical equipment	-	1 (2.2)	-	5 (9.3)	-	-
	Unkindness of medical staffs	-	1 (2.2)	-	1 (1.9)	-	1 (4.0)
	Others	-	3 (6.7)	-	1 (1.9)	-	-
Intentions to re-use the same institution	I must use the hospital	12 (30.8)	14 (31.1)	4 (66.7)	31 (57.4)	23 (57.5)	9 (36.0)
	I will use the hospital	23 (59.0)	16 (35.6)	1 (16.7)	15 (27.8)	9 (22.5)	12 (48.0)
	I may use the hospital	4 (10.3)	11 (24.4)	1 (16.7)	4 (7.4)	4 (10.0)	2 (8.0)
	I will not use the hospital	-	3 (6.7)	-	1 (1.9)	2 (5.0)	2 (8.0)
	I will never use the hospital	-	1 (2.2)	-	3 (5.6)	2 (5.0)	-

*Multiple responses to this question were allowed; †This question is only for women who gave birth out of district.

ric care underserved areas” from the Korean government. From the women who gave birth in the hospital in Youngdong, 94.9% answered they knew about the program. 86.7% of women who gave birth outside their districts knew about the program however they still chose to give birth in hospitals outside their who gave birth outside their district. In Yecheon, 40.7% of women who gave birth outside their who gave birth outside their district did not know about the program, and in Gangjin, for those who gave birth in or outside their who gave birth outside their district, about 40% of women did not know about the program. We asked what kind of additional support was needed for hospitals with the SPOU program. The results varied by each area. The majority wanted hiring of qualified medical doctors and support for medical fees. We asked women who went outside their districts to give birth, “If improvements you suggested were made in the hospitals inside your districts, would you use the hospital for your next pregnancy?” All women in the three areas answered with the majority saying they would use the hospitals in their communities for their next pregnancy. It was found that, regardless of the birth place, more than 95% of women strongly agreed the SPOU program to be continued and expanded (Table 5).

DISCUSSION

The purpose of this study was to evaluate the policy of “The Supporting Program for Obstetric Care Underserved Areas” in three

designated areas. Even though this program is in the just beginning stages, the authors believe that an early evaluation was necessary. For the successful implementation of this early program, problems should be found in the early stages for finding modifications and improvement. Overall, 20% of pregnant women in Youngdong and Gangjin used hospitals in their districts as a result of the SPOU policy whereas Yecheon was 8%. For those who used these hospitals, their satisfaction rates were high and the reasons for women going to hospitals outside their districts in Youngdong and Gangjin was the lack of confidence in medical staffs whereas in Yecheon, many women did not recognize the hospital were providing the prenatal care and delivery service. Women who gave birth outside their districts answered that if improvements were made such as hiring qualified medical doctors and expanding the support for medical fees was to take place, they would give birth in the community (or district) hospital for their next pregnancy.

Prenatal care is essential for both mother and baby as based on regular check-ups, early detection can be found and appropriate response can be given (15) and if possible this should be done in their districts. However as noted above, there are many obstetrically underserved areas which are mainly located in rural regions. Therefore pregnant women living in rural areas must commute outside their districts which could make complications for mother and baby and also in emergency situations problems could arise if rapid response is unavailable (1-4, 7, 17-19).

Table 4. Overall and sub-categorical satisfaction rates and suggestions for improvement in hospitals

Unit: persons (%)

Questionnaire	Youngdong		Yecheon		Gangjin		
	In-district	Out of district	In-district	Out of district	In-district	Out of district	
Total number of respondents	39 (100)	45 (100)	6 (100)	54 (100)	40 (100)	25(100)	
Overall satisfaction	Strongly satisfied	16 (41.0)	16 (35.6)	4 (66.7)	22 (40.7)	14 (35.0)	9 (36.0)
	Satisfied	20 (51.3)	22 (48.9)	2 (33.3)	26 (48.1)	21 (52.5)	14 (56.0)
	Usually	2 (5.1)	5 (11.1)	-	6 (11.1)	3 (7.5)	2 (8.0)
	Dissatisfied	1 (2.6)	2 (4.4)	-	-	1 (2.5)	-
	Strongly dissatisfied	-	-	-	-	1 (2.5)	-
Medical equipment	Strongly satisfied	12 (30.8)	13 (28.9)	5 (83.3)	24 (44.4)	15 (37.5)	8 (32.0)
	Satisfied	18 (46.2)	30 (66.7)	1 (16.7)	25 (46.3)	18 (45.0)	14 (56.0)
	Usually	8 (20.5)	2 (4.4)	-	5 (9.3)	5 (12.5)	2 (8.0)
	Dissatisfied	1 (2.6)	-	-	-	1 (2.5)	-
	Strongly dissatisfied	-	-	-	-	1 (2.5)	-
	Do not know / No answer	-	-	-	-	-	1 (4.0)
Medical services	Strongly satisfied	26 (66.7)	20 (44.4)	5 (83.3)	31 (57.4)	25 (62.5)	11 (44.0)
	Satisfied	11 (28.2)	20 (44.4)	1 (16.7)	18 (33.3)	11 (27.5)	13 (52.0)
	Usually	2 (5.1)	2 (4.4)	-	4 (7.4)	3 (7.5)	1 (4.0)
	Dissatisfied	-	3 (6.7)	-	1 (1.9)	-	-
	Strongly dissatisfied	-	-	-	-	1 (2.5)	-
Kindness of medical staffs	Strongly satisfied	30 (76.9)	20 (44.4)	5 (83.3)	31 (57.4)	25 (62.5)	13 (52.0)
	Satisfied	7 (17.9)	19 (42.2)	1 (16.7)	19 (35.2)	13 (32.5)	9 (36.0)
	Usually	2 (5.1)	2 (4.4)	-	3 (5.6)	1 (2.5)	3 (12.0)
	Dissatisfied	-	3 (6.7)	-	1 (1.9)	-	-
	Strongly dissatisfied	-	1 (2.2)	-	-	1 (2.5)	-
Hospital facility	Strongly satisfied	16 (41.0)	17 (37.8)	5 (83.3)	19 (35.2)	16 (40.0)	10 (40.0)
	Satisfied	17 (43.6)	20 (44.4)	1 (16.7)	26 (48.1)	15 (37.5)	12 (48.0)
	Usually	5 (12.8)	7 (15.6)	-	9 (16.7)	6 (15.0)	3 (12.0)
	Dissatisfied	1 (2.6)	1 (2.2)	-	-	3 (7.5)	-
	Strongly dissatisfied	-	-	-	-	-	-
Suggestions for improvement of the community (or district) hospitals*†	Expansion or improvement of hospital facility	10 (25.6)	-	1 (16.7)	-	14 (35.0)	-
	Improvement on medical equipment such as ultrasound	10 (25.6)	-	-	-	4 (10.0)	-
	Expansion of additional services	7 (17.9)	-	1 (16.7)	-	7 (17.5)	-
	Improvement of the level of medical services	4 (10.3)	-	1 (16.7)	-	1 (2.5)	-
	Improving kindness of medical staffs	2 (5.1)	-	-	-	2 (5.0)	-
	Additional support of medical fee	1 (2.6)	-	-	-	2 (5.0)	-
	Do not know / No answer	4 (10.3)	-	1 (16.7)	-	10 (25.0)	-
	Nothing	8 (20.5)	-	2 (33.3)	-	4 (10.0)	-
	Others	3 (7.7)	-	-	-	1 (2.5)	-

*Multiple responses to this question were allowed; †This question is only for women who gave birth in community (or district) hospital.

It is meaningful that about 20% of pregnant women are using hospitals in their district, except Yecheon. This result is significant as women selecting hospitals to give birth is not as simple as choosing one for other diseases. Women will need to wholly put their trust in the hospital for ten months with regard to both mother and baby's health and to entrust a hospital, the mother will consider many aspects such as medical staff, equipment and hospital reputation. If there were no trust in these it would be impossible for mothers to go to these hospitals. It is not an exaggeration to pinpoint that the effect of the SPOU policy is proving to be positive as 20% is not a low number despite the fact that the implementation has only been a year. Yecheon was relatively low compared to the other two regions as they were at 8.2%. Therefore, the Korean government should investigate which factors are affecting women in Yecheon preventing them from going to hospitals in their communities.

According to our results, distance and accessibility were the main reasons women were utilizing hospitals in their districts.

This result shows that the policy's intention is being corresponded well. On the other hand, we have to listen to the voice of pregnant women who are going outside of their districts in two aspects. That is, why they chose the outside community (or district) hospital and the reasons of not selecting the inside community (or district) hospital. Our results showed that they are in favor of the outside hospital's facility, system, and had trust in the medical staffs. To reverse flow of women to utilize inside community (or district) hospital, there needs to be an effort to satisfy all the needs of pregnant women. Moreover, even though the majority of women giving birth in their districts were satisfied with the hospital, we need to pay more attention to their suggestions of improvement in the inside community (or district) hospital including the improvement of medical facility and medical equipment. Regardless of the place of women giving birth, they showed tremendous support in the SPOU program continuing and being expanded. However we must focus on the elements that must be prepared for further improvement

Table 5. Awareness and attitude of "The supporting program for obstetric care underserved areas (SPOU)"

units: persons (%)

Questionnaire		Youngdong		Yecheon		Gangjin	
		In-district	Out of district	In-district	Out of district	In-district	Out of district
Total number of respondents		39	45	6	54	40	25
When do you recognize the hospital you gave birth is subject of SPOU program?*	I have already recognized the fact before utilizing the hospital.	25 (64.1)	-	5 (83.3)	-	11 (27.5)	-
	I recognized the fact during receiving prenatal care in the hospital.	11 (28.2)	-	1 (16.7)	-	9 (22.5)	-
	I recognized the fact after birth	1 (2.6)	-	-	-	3 (7.5)	-
	I did not recognize the fact until now	2 (5.1)	-	-	-	17 (42.5)	-
Do you know your community (or district) hospital is participating SPOU program?†	Yes, I know the fact	-	39 (86.7)	-	32 (59.3)	-	15 (60.0)
	No, I do not know the fact	-	6 (13.3)	-	22 (40.7)	-	10 (40.0)
Which is the most important additional support for hospital with SPOU?	Improvement of hospital facility	3 (7.7)	7 (15.6)	1 (16.7)	11 (20.4)	6 (15.0)	2 (8.0)
	Improvement of medical equipment	11 (28.2)	11 (24.4)	1 (16.7)	2 (3.7)	9 (22.5)	3 (12.0)
	High qualified medical staffs	8 (20.5)	18 (40.0)	2 (33.3)	33 (61.1)	8 (20.0)	11 (44.0)
	Supporting for medical fee	17 (43.6)	9 (20.0)	2 (33.3)	8 (14.8)	17 (42.5)	5 (20.0)
	Do not know	-	-	-	-	-	4 (16.0)
If improvements you suggested were made in the hospitals inside your communities, would you utilize the hospital for your next pregnancy?‡	I must utilize the hospital	-	7 (15.6)	-	19 (35.2)	-	3 (12.0)
	I will utilize the hospital	-	25 (55.6)	-	23 (42.6)	-	10 (40.0)
	I may utilize the hospital	-	12 (26.7)	-	8 (14.8)	-	8 (32.0)
	I will not utilize the hospital	-	-	-	3 (5.6)	-	-
	I will never utilize the hospital	-	-	-	1 (1.9)	-	-
Do not Know/No Answer	-	1 (2.2)	-	-	-	4 (16.0)	
What is your position about SPOU program?	SPOU should be continued and expanded	38 (97.4)	44 (97.8)	6 (100)	53 (98.1)	39 (97.5)	24 (96.0)
	SPOU should be reduced or discontinued	-	1 (2.2)	-	1 (1.9)	1 (2.5)	-
	Do not know/No answer	1 (2.6)	-	-	-	-	1 (4.0)

*This question is only for women who gave birth in community (or district) hospital; †This question is only for women who gave birth in out of community (or district).

of the SPOU program. Many women requested for the hire of qualified doctors and more support in medical fees and if this was implemented, many women using outside community (or district) hospital showed interest in utilizing the community (or district) hospital for their next pregnancy. Additionally, there is an affect from the quality of healthcare facilities and equipments need to be of high quality to encourage women to utilize community (or district) hospital.

About 40% of women in Yecheon (40.7%) and Gangjin (40.0%) using hospitals outside their districts did not know about the SPOU policy whereas women in Youngdong were 13.3%. This is a very important finding for policymakers because low awareness rate of a certain policy can result in low participation rate. However, it is not denied the fact that the government has mainly focused on how to reopen or restart obstetrical services and has relatively overlooked how to promote and encourage pregnant women to participate on the SPOU. Therefore, current strategy of promotion and advertisement for SPOU should be rechecked.

We acknowledge the fact that the government is making an effort to support rural community (or district) hospitals with financial aid however in reality this amount is currently insufficient. For example, under the current policy, the hospitals can receive a total amount of 1.25 billion KRW (USD = 1,085,258), including investing in facility and equipment with 1.0 billion KRW (USD = 868,206) and the rest 0.25 billion KRW (USD = 217,052) can be used for OBGY operating costs for every 6 months.

However in reality these costs are insufficient with the total amount of 0.25 billion KRW (USD = 217,052) to operate 2 OBGY specialists, 1 pediatrician and 8 nurses for 6 months. Besides, the costs for doctors in these areas are higher because of the location and it is more difficult to employ nurses as most would want to work in a city. Even if they were employed, fair wages must be given in order for nurses to work in these conditions. The amounts are not enough to cover OBGY specialist's night shift pay and in reality 3 OBGY specialists can be needed for rotation in the delivery room. In short, additional financial support reflecting reality should be given to rural community (or district) hospitals (20).

There are some limitations in this study. First, selection bias may occur due to low response rate (Youngdong: 84 respondents out of 318 total number of birth; Yecheon: 60 out of 281; and Gangjin; 65 out of 517). Therefore, the results should be carefully interpreted. Second, the evaluation was based on the results of participant's survey. In general, to evaluate a program, policymakers considers 3 aspects; structure, process, and outcome of the project. However in this study we only dealt with the outcome, focusing only on participants. Even so, this study is meaningful because the SPOU policy was evaluated at an early stage and we were able to gather precious information from real subjects, pregnant women currently living in rural areas.

The policy, "The Supporting Program for Obstetric Care Underserved Areas", is to give financial aid to community (or district) hospitals in rural areas to reopen prenatal care and deliv-

ery services for pregnant women. Our results showed that the policy is currently effective even though it is still at an early stage. However, to successfully implement this policy, the government needs to consider recruiting highly qualified medical staffs and improve medical facility and equipment. Furthermore, activity in promotion is needed to make women aware of this program. Lastly, there needs to be a continuous evaluation and monitoring to successfully implement and disseminate the project.

DISCLOSURE

The authors have no conflicts of interest to disclose.

ORCID

Baeg Ju Na <http://orcid.org/0000-0002-3742-6035>

Hyun Joo Kim <http://orcid.org/0000-0001-5784-3576>

Jin Yong Lee <http://orcid.org/0000-0002-7752-2697>

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