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ORIGINAL ARTICLE

Effect of Antenatal Breastfeeding Counselling on Early Initiation of Breastfeeding Among Mothers Delivering at a Tertiary Care Hospital in Tamilnadu: A Quasi-Experimental Study

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Abstract

Background: Early initiation of breastfeeding (EIBF) within one hour of birth is essential for optimal neonatal growth and survival. Despite adequate antenatal (AN) care, the rates of EIBF remain suboptimal in India. Effective antenatal counselling may improve breastfeeding practices and promote timely initiation. **Materials and Methods:** A quasi-experimental study was conducted in the Department of Obstetrics of a tertiary care teaching hospital. A total of 220 pregnant women were included, with 110 mothers in the intervention group receiving breastfeeding counselling and 110 mothers in the control group receiving routine care. Information regarding maternal characteristics, antenatal visits, mode of delivery, knowledge of EIBF, and timing of breastfeeding initiation was collected and analysed. **Results:** Among mothers in the intervention group, 80 (72.7%) initiated breastfeeding within one hour of birth compared to 56 (50.9%) in the control group. Adequate knowledge regarding EIBF was observed among 105 (95.5%) mothers in the intervention group compared to 51 (46.3%) mothers in the control group. The common reasons for delayed initiation of breastfeeding were lack of awareness, perceived inadequate breast milk secretion, and administration of pre-lacteal feeds. **Conclusion:** Antenatal counselling provided prior to the onset of labour significantly improved maternal knowledge regarding EIBF and increased the proportion of mothers initiating breastfeeding within one hour of birth. Simple and cost-effective interventions such as focused antenatal breastfeeding counselling may help improve early breastfeeding practices and contribute to better neonatal health outcomes.

Keywords: Early initiation of breastfeeding (EIBF); Antenatal counselling; Maternal health; Breastfeeding promotion; Neonatal health; Health education

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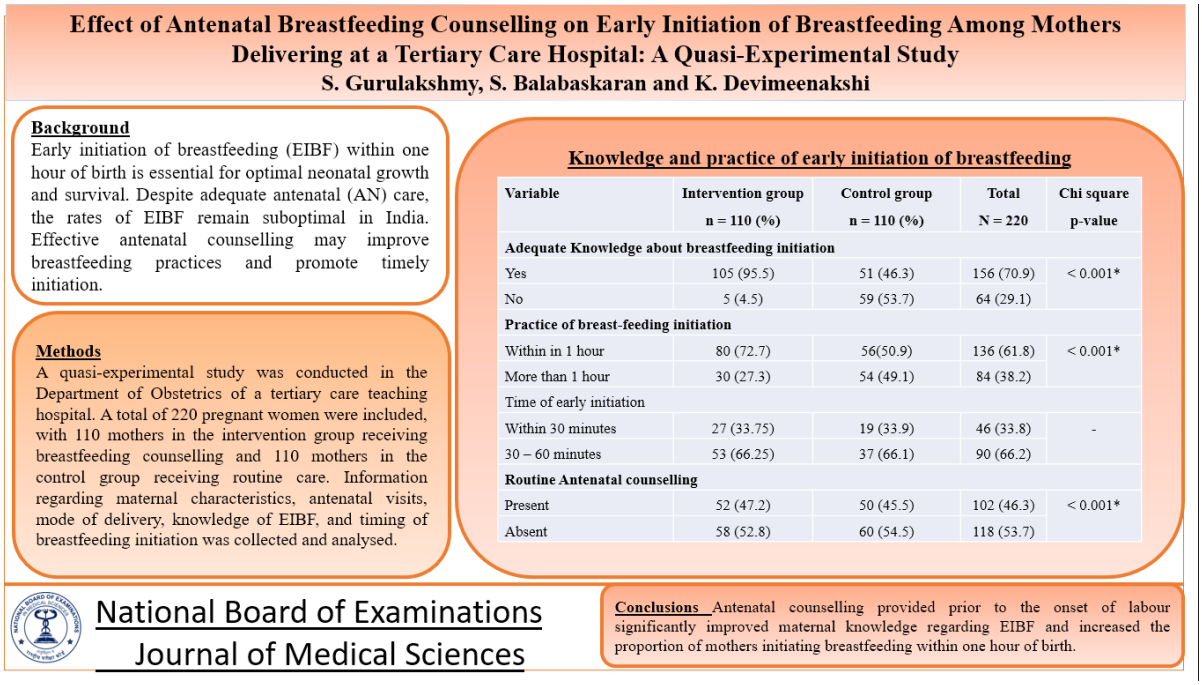
Graphical Abstract



Introduction

"Early Initiation of Breast Feeding" (EIBF) refers to provision of mother's breast milk to infants within one hour of birth and ensures that the infant receives the colostrum, or "first milk", which is rich in protective factors. According to World Health Organization (WHO), optimal breastfeeding includes early initiation of breastfeeding, exclusive breastfeeding for six months, frequent feeding, continuous breastfeeding for two years and increase in frequency of feeding during illness. UNICEF and WHO recommend to initiate breastfeeding within the first hour of birth and exclusive breastfeeding for the first six months of life – meaning no other foods or liquids are provided, including water [1].

Breast milk contains all the nutrients an infant need in the first six months of life. Early initiation of breastfeeding has many health benefits both for the mother and infant. It increases ability to fight infections, reduces the risk of diarrhoea, pneumonia, reduces the risk of overweight and obesity in childhood and adolescence thereby increasing the survival rate of children [2]. Colostrum is the first milk that is very vital for newborns in protecting against infections. It is rich in immunoglobin G, and has a great role in disease resistance. It has been found that bacterial, viral, fungal and protozoal infections of the newborn baby can be reduced by feeding colostrum. According to different studies, children who were not initiated breastfeeding early were more likely to develop recurrent infections, stunting, underweight, and wasting [3].

According to World Health Organization (WHO) report 2018 globally, 3 in 5 babies are not breastfed in the first hour of life. Only 41% of infants under 6 months of age are exclusively breastfed

[1]. Early initiation of breastfeeding and exclusive breastfeeding for the first 6 months of life prevents around 20% newborn deaths and 13% under-five deaths [4]. It can also reduce mortality due to neonatal infections (sepsis, pneumonia, tetanus, and diarrhoea) which contribute to 36% of neonatal deaths from all causes [4]. According to a systematic review, infants who were initiated breastfeeding after first hour were at 33% risk of neonatal mortality [5].

India has not made much progress in increasing Early Initiation of Breast Feeding (EIBF) rates, which was 41.6 % in 2015-16 (NFHS 4) and 41.8% in 2019-21 (NFHS 5). In Tamil Nadu, 54.7% children were breastfed within one hour of delivery (NFHS 4) [6] and 60.2 in the 2019-2021 data of NFHS 5 [7]. Caesarean sections are one of the biggest hurdles in initiation of breastfeeding in hospital-born babies. Various studies have shown that infants born by caesarean section were less likely to receive breastfeeding within first hour of birth, than vaginally delivered infants [8,9]. After caesarean section, mothers and babies are frequently monitored in separate rooms depriving them from the opportunity of breastfeeding and bonding.

Prenatal counselling plays a vital role in early initiation of breastfeeding. Even with adequate antenatal care, our NFHS data reveals that EIBF is not adequate. Hence the present study was conducted to evaluate the role of counselling prior to onset of labour on the rates of early initiation of breast feeding and to identify factors influencing it.

Material and Methods

The present study was conducted in Department of Obstetrics of a tertiary care medical college hospital after obtaining approval from the Institutional Ethics Committee (IEC). It was a quasi-experimental study which was conducted from August 2021 to October 2021. Pregnant women with term gestation who were admitted for safe confinement were included in the study. Mothers whose neonates required NICU admission and mothers with severe postnatal complications were excluded from the study. Informed consent was obtained from the antenatal mothers and they were allotted to intervention group and control groups. Intervention group included AN mothers admitted with no labour pain for safe confinement. Control group was AN mothers admitted with labour pain. Basic details were obtained from the both groups.

Mothers in the Intervention group were given counselling on benefits of early initiation of breastfeeding using counselling charts. No counselling was provided to mothers in the control group. Baseline knowledge regarding early initiation of breastfeeding was not formally assessed before administration of counselling. The study was designed to evaluate the effect of immediate antenatal counselling provided prior to delivery on maternal knowledge and breastfeeding initiation practices. After the delivery, both groups were followed-up. Mothers who met the exclusion criteria in both groups were excluded. During the post natal period all the mothers were asked about early initiation of breastfeeding, reasons for non-initiating of early breastfeeding.

The impact of sociodemographic factors on initiation of breastfeeding in both groups was compared. Factors such as maternal age, education, morbidity, number of antenatal visits, order of birth, mode of delivery, gender of baby, maturity of baby, birth weight of the baby were studied. Data were analysed using SPSS version 23.0 software which included frequency, percentages were used to describe the data. Categorical variables were expressed as frequencies and percentages. Differences between groups were assessed using the Chi-square test. A p-value <0.05 was considered statistically significant Sample size calculation**:** Sample size was calculated based on study done by Phuljhele et al. [10] who reported the proportion of mothers who breastfed within 1 hour in the counselled group was 73.6% and control group was 46%, with alpha error 1%, Beta error 5% and 1:1 ratio, number of mothers required in each group was calculated to be 109. Hence, we included 110 pregnant mothers in each group (intervention and control group) (Table 1).

Results

Table 1: Baseline characteristics of the study population among intervention and control group

Characteristics	Intervention Group n = 110 (%)	Control Group n = 110 (%)	Total N = 220 (%)
Age of mother			
< 30 years	104 (94.5)	97 (88.2)	201 (91.4)
≥ 30 years	6 (5.5)	13 (11.8)	19 (8.6)
Educational qualification			
Illiterate	2 (1.8)	3 (2.7)	5 (2.3)
Primary and middle school	10 (9.1)	10 (9.1)	20 (9.1)
Secondary and higher secondary	56 (50.9)	55 (50.0)	111 (50.5)
Graduate	42 (38.2)	42 (38.2)	84 (38.2)
Number of antenatal visits			
< 4 visits	1 (0.9)	3 (2.7)	4 (1.8)
≥ 4 visits	109 (99.1)	107 (97.3)	216 (98.2)
Morbidity			
Gestational diabetes mellitus	5 (4.5)	11 (10.0)	16 (7.3)
Pregnancy-induced hypertension	42 (38.2)	17 (15.5)	59 (26.8)
Anaemia	46 (41.8)	30 (27.3)	76 (34.5)

Cardiac problems	0 (0.0)	1 (0.9)	1 (0.5)
No health issues	17 (15.5)	51 (46.4)	68 (30.9)
Mode of delivery			
Vaginal delivery	76 (69.1)	56 (50.9)	132 (60.0)
Instrumental delivery	1 (0.9)	2 (1.8)	3 (1.4)
Caesarean section	33 (30.0)	52 (47.3)	85 (38.6)
Order of birth			
First	37 (33.6)	52 (47.3)	89 (40.5)
Second	55 (50.0)	44 (40.0)	99 (45.0)
Third or above	18 (16.4)	14 (12.7)	32 (14.5)
Gender of the baby			
Male	48 (43.6)	56 (50.9)	104 (47.3)
Female	62 (56.4)	54 (49.1)	116 (52.7)
Birth weight			
< 2.5 kg	19 (17.3)	31 (28.2)	50 (22.7)
≥ 2.5 kg	91 (82.7)	79 (71.8)	170 (77.3)

The mean age of the mothers was 26.5 ±3.8 (SD) years. Majority of the mothers (91.6%) were less than 30 years. Nearly (50.4%) had completed secondary and higher education. About 216 (98.8%) mothers had more than 4 Antenatal visits. 76 (34.5%) mothers were anaemic, 59 (26.8%) had PIH and 16 (7.27%) had gestational diabetes. Majority 99 (45%) of the babies belong to second order of birth. Among participants, 132 (60%) had vaginal delivery and 85 (38.6%) underwent caesarean section. About 50 (22.73%) babies had birth weight were less than 2.5kg (Table 2).

Table 2. Knowledge and practice of early initiation of breastfeeding in the intervention and control groups

Variable	**Intervention group n = 110 (%)**	**Control group n = 110 (%)**	**Total N = 220**	**Chi square p-value**
Adequate Knowledge about breastfeeding initiation				
Yes	105 (95.5)	51 (46.3)	156 (70.9)	< 0.001*

No	5 (4.5)	59 (53.7)	64 (29.1)	
Practice of breast-feeding initiation				
Within in 1 hour	80 (72.7)	56(50.9)	136 (61.8)	< 0.001*
More than 1 hour	30 (27.3)	54 (49.1)	84 (38.2)	
Time of early initiation				
Within 30 minutes	27 (33.75)	19 (33.9)	46 (33.8)	-
30 – 60 minutes	53 (66.25)	37 (66.1)	90 (66.2)	
Routine Antenatal counselling				
Present	52 (47.2)	50 (45.5)	102 (46.3)	< 0.001*
Absent	58 (52.8)	60 (54.5)	118 (53.7)	

Among intervention group, 105 (95.5%) mothers had acquired knowledge about early initiation of breastfeeding due to counselling while in the control group, 51 (46.3%) had prior knowledge about early initiation without intervention and it was statistically significant (p=0.001) In intervention group, 80 (72.7%) mothers started early initiation of breastfeeding within an hour. Whereas, in control group 56 (50.9%) started early initiation of breastfeeding within an hour and 54 (49.1%) failed to provide breast milk within first hour of baby birth. There was a significant difference in early initiation of breastfeeding between the two groups. (chi-square test, p<0.001) Among the mothers who initiated breastfeeding within an hour, 27 (33.75%) initiated breastfeeding in intervention group and 19 (33.9%) in control group within 30 minutes.

Nearly, 52 (47.2%) in intervention group and 50 (45.5%) in control group received antenatal breastfeeding counselling during their antenatal visits, which is almost similar in both groups.

Table 3. Reasons for delay in initiation of breastfeeding among intervention and control group

Reasons	**Intervention group n = 30 (%)**	**Control group n = 54 (%)**	**Total N=84 (%)**
Not aware	2 (6.7)	34 (63)	36 (43)
Mother felt tired	17 (56.6)	4 (7.3)	21 (25)
Not enough breast milk	9 (30)	8 (14.8)	17 (20)
Given pre-lacteal feeds	2 (6.7)	7 (13)	9 (10.8)
Discarding initial breast milk	0 (0.0)	1 (1.9)	1 (1.2)

Among selected samples, the reasons for not initiating breastfeeding early in intervention group, were tiredness which was observed in 17 (56.6%) mothers while 9 (30%) mothers perceived that breast milk was inadequate. Around 34 (63%) mothers were not aware of early initiation, 8 (14.8%) mothers felt inadequate secretion of breast milk, 7 (13%) mothers had given pre-lacteal feeds and 4 (7.3%) mothers felt tired in control group.

Discussion

While breast feeding practices in India have improved over time, some of harmful practices are still continuing like use of prelacteal feeds, avoiding colostrum, early top feeding etc. In this study, it was investigated whether antenatal breastfeeding counselling prior to delivery improved outcomes of breast-feeding practices in terms of early initiation and knowledge about EIBF. The present study revealed that majority of the mothers-initiated breastfeeding within an hour with significant increase in the knowledge about early initiation of breast feeding after antenatal counselling prior to onset of labour. Antenatal counselling prior to onset of labour had a positive impact on improving the knowledge about breast feeding initiation. Counselling had also resulted in improved rates of early breastfeeding.

Out of 220 mothers, majority 201 (91.4%) were less than 30 years. The mean age of the mothers was 26 ±3.8 (SD) years. Phuljhele al. [10] reported 98.8% mothers less than 30 years of age which was higher in their study. About 111 (50.5%) mothers had studied up to higher secondary classes. Another similar study has reported majority (34%) of the participants were illiterate [7]. Among selected samples, 60% mothers delivered by vaginal delivery, whereas 38.6% of mothers delivered their baby by caesarean section. Phuljhele al. [10] reported 52.5% had normal vaginal delivery and 47.5% underwent caesarean section. In the present study, male neonates were marginally less than female neonates (47.3% vs 52.7%). Another study has reported percentage of male neonates was marginally high 51.5% compared to 48.8% female neonates [7]. Around 77.27% neonates weighed more than 2.5 kg and 22.73% neonates were low birth weight.

In present study, 105 (95.5%) mothers acquired knowledge about EIBF (after counselling). Among them, 80 (72.7%) mothers breastfed their babies within an hour of birth. We found a significant increase in EIBF in counselled group. A study conducted by Phuljhele et al. [10] found that, 70.4% mothers acquired knowledge about EIBF (after counselling). Among them, 65.5% breastfed babies within an hour of birth. Koli et al reported, post counselling improved knowledge regarding breastfeeding practices significantly reflected in EIBF (91.85%) in their intervention group [11].

After counselling, majority of mothers acquired knowledge and breastfed the babies within an hour of birth. In control group, 51 (46.3%) had knowledge about EIBF while 59 (53.7%) were not aware of early initiation of breastfeeding which led to delayed initiation of breastfeeding in 54 (49.1%) mothers.

In our study, 72.7% initiated breastfeeding within one hour in intervention group and 56(50.9%) initiated breastfeeding within an hour in control group. Mullany et al. [12] in their study from Nepal reported that though majority of the mothers adopt breastfeeding practice, the initiation of breastfeeding within one hour was only in 3.4% of mothers. Phuljhele et al. [10] in their study among freshly counselled mothers, 65.5% initiated early compared to 46% early initiation in control group. With interventional counselling to AN mother immediately prior to delivery, we found significant increase in EIBF in our study. In a recent study done by Sunil P et al it was found that the rate of early initiation of breast feeding was found to be 80.8% (95%CI 76.4 to 84.6) [13].

In our study, 47.2% received AN counselling about EIBF during their AN visit but after intervention we found significant improvement in knowledge and early initiation of breastfeeding in intervention group. In control group (without intervention), 45.5% received counselling about EIBF in AN visit, 46.3% had knowledge about EIBF and only 50.9% initiated breastfeeding within 1 hour. Majority (99.1% intervention, 97.3% control) of mothers had more than 4 antenatal visits. With adequate AN visits in both groups, we found that counselling and awareness about EIBF was minimal in both groups. Phuljhele al. [10] reported 39.8% mothers received breastfeeding counselling during routine AN visit which was lower than our observations.

Bimerew et al. found that timely initiation of breastfeeding was significantly associated with the presence of four and more antenatal appointments [14]. Tilahun et al. reported that advice on timely initiation of breast-feeding during ANC visits had shown association with early initiation of breastfeeding [15]. Another study found that advice given to mother on breast feeding during antenatal care visits and knowing importance of colostrum were positively associated with timely initiation of breastfeeding [16]. Koli et al. reported structured effective breastfeeding counselling in prenatal period resulted in an increase in rates of EIBF. It increased the knowledge regarding EIBF and also increased confidence of mothers and enabled them to breast feed their babies with least assistance [11]. In our study, due to immediate counselling prior to delivery, we found marked increase in the knowledge about EIBF in intervention group. Thus, our study emphasizes the importance of increasing awareness about EIBF during AN visit and also prior to delivery.

In our study, 63% were not aware about EIBF, 14.8% mothers had inadequate breastmilk, 13% gave prelacteal feeds, 7.3% mothers felt tired and 1.9% mothers discarded initial breastmilk in control group. Another study has found 94% mothers were unaware about EIBF which was higher when compared with our study. In addition, other factors responsible for delay in initiation in their study was: giving prelacteal feeds, delay in milk production, belief that colostrum is not good to the baby, fear of handling newborn baby etc. [17]. Their observations concurred with the findings of our study.

Limitation

This study had certain limitations. It was a single-centre, quasi experimental study and therefore selection bias cannot be ruled out. The findings may not be generalizable to other settings. Long-term breastfeeding outcomes such as exclusive breastfeeding was not assessed.

Conclusion

Antenatal counselling prior to onset of labour was associated with improved maternal knowledge regarding breastfeeding initiation and higher rates of early initiation of breastfeeding. However, given the quasi-experimental design and potential confounding factors, further randomized studies are warranted to confirm these findings.

Statements and Declarations

Conflict of interest

The authors have no relevant financial or non-financial interests to disclose.

Funding

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Data availability statement

The data collected and utilized in the study are available from the corresponding author and will be shared on request.

Ethical approval

The study was performed after obtaining approval from the Institutional ethics committee (meeting held on 02/09/2021, Protocol ID 593/2021.

Informed consent

Written informed consent was obtained from all the participants after duly explaining the details of the study. Consent was also obtained for publication ensuring confidentiality.

Authors' contribution

SG: Concept of the study, data collection, data analysis, interpretation of data, drafting the article, reviewing the article, approval of version submitted; SB: Concept of the study, data analysis, interpretation of data, drafting the article, reviewing the article, approval of the version submitted; KD: Concept of the study, data analysis, interpretation of data, drafting the article, reviewing the article, approval of version submitted

References

1. WHO.org. Breastfeeding facts. 2021. Available from: https://www.who.int/health-topics/breastfeeding#tab=tab_2
2. Edmond KM, Zandoh C, Quigley MA, Amenga-Etego S, Owusu-Agyei S, Kirkwood BR. Delayed breastfeeding initiation increases risk of neonatal mortality. Pediatrics. 2006;117(3):380–386.
3. Abie BM, Goshu YA. Early initiation of breastfeeding and colostrum feeding among mothers of children aged less than 24 months in Debre tabor northwest Ethiopia – a cross sectional study. BMC Res Notes. 2019;12(65):1–14.
4. Phukan D, Ranjan M, Dwivedi LK. Impact of timing of breastfeeding initiation on neonatal mortality in

India. IntBrestfedJournl. 2018;27:1–12.
5. Smith ER, Hurt L, Chowdhury R, Sinha B, Fawzi W, Edmond KM, et al. Delayed breastfeeding initiation and infant survival: a systematic review and meta-analysis. PLoS ONE. 2017;12(7):1–15.
6. NFHS.org. National Family Health Survey (NFHS 4). 2021. Available from: http://rchiips.org/nfhs/nfhs-4Reports/India.pdf
7. NFHS.org.National Family HealthSurvey (NFHS 5). Available from https://mohfw.gov.in/sites/default/files/NFHS-5Phase II 0 pdf
8. Getaneh, T., Negesse, A., Dessie, G. et al. Impact of cesarean section on timely initiation of breastfeeding in Ethiopia: a systematic review and meta-analysis. Int Breastfeed J 2016;16;51. https://doi.org/10.1186/s13006-021-00399-9
9. Takahashi, K., Ganchimeg, T., Ota, E. et al. Prevalence of early initiation of breastfeeding and determinants of delayed initiation of breastfeeding: secondary analysis of the WHO Global Survey. Sci Rep **7**, 44868 (2017). https://doi.org/10.1038/srep44868
10. Phuljhele S, Rathia S.K, Chandrakar A. Effect of antenatal breastfeeding counselling done in-hospital prior to delivery on breast feeding outcomes amongst mothers admitted at a tertiary care hospital in middle India. Int J Pediatr Res. 2018;5(5):284–291.
11. Koli HB, Nair MG, Shah MC. Int J ReprodContraceptObstet Gynecol. 2021 Jul;10(7):2699–2703.
12. Mullany LC, Katz J, Li YM, Khatry SK, LeClerq SC, Darmstadt GL, Tielsch JM. Breast-feeding patterns, time to initiation, and mortality risk among newborns in southern Nepal. J Nutr. 2008 Mar;138(3):599–603.
13. Sunil P, Kumari GS, Gopalan SK, Namitha P. Rate of early initiation of breastfeeding among mothers delivered in a tertiary care maternity centre: a descriptive cross-sectional study. Int J Contemp Pediatr 2023;10:1566–1571.
14. Bimerew A, Teshome M, Kassa GM. Prevalence of timely breastfeeding initiation and associated factors in Dembecha district, North West Ethiopia: a cross sectional study. Int Breastfeed J. 2016;11:28–31.
15. Tilahun G, Degu G, Azale T, Tigabu A. Prevalence and associated factors of timely initiation of breastfeeding among mothers at DebreBerhan town, Ethiopia: a cross-sectional study. International Breast feeding Journal. 2016 Oct 3;11(1):27–31.
16. Gelete BW, Addisu YK, Haile MT. Timely Initiation of Breastfeeding and Its Associated Factors among Mothers in TiyoWoreda, Arsi Zone, Ethiopia: A Community- Based Cross Sectional Study. Clinics Mother Child Health. 2016;13(1):221–226.
17. Roa MVR, Fathima N. Int J Reprod Contracept Obstet Gynecol. 2018 Dec;7(12):4840–4844.