



Research Article

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Determinants for delayed initiation of breastfeeding- A hospital based comparative study between primiparous and multiparous mothers

Ayushi Pandya¹, Mallika Chavada^{*2}, Rohit Jain³, P. B. Verma⁴

¹ Third Year Medical Student, Department of Community Medicine, GMERS Medical College, Gandhinagar, Gujarat- 382012, India

² Assistant Professor, Department of Community Medicine, GMERS Medical College, Gandhinagar, Gujarat-382012, India

³ Associate Professor, Department of Obstetrics and Gynecology, GMERS Medical College, Gandhinagar, Gujarat- 382012, India

⁴ Professor, Department of Community Medicine, GMERS Medical College, Gandhinagar, Gujarat- 382012, India

ABSTRACT

Background: For the health and development of the newborn, initiation of lactation within hour of delivery is very crucial factor. Early milk secretion after the delivery is associated with various factors including parity of the mothers and early suckling by neonates. **Aims and Objectives:** To know and compare the time of initiation breast feeding and to identify and compare the determinants for delayed initiation of breast feeding between primiparous and multiparous mothers. **Study Design:** Hospital based longitudinal study. **Setting:** Obstetrics and Gynaecology department, tertiary care hospital, Gujarat, India. **Materials and Methods:** Total 150 women studied, out of which 75 were primiparous and 75 multiparous mothers. Socio-demographic variables, Obstetric and neonatal factors were compared between primi and multiparous women for delayed initiation of breast feeding by using pre-structured baseline questionnaire. Height, weight, Body mass index measurement and Haemoglobin estimation were done using standard procedure. **Statistics:** Data entry and analysis was done in software Epi info version 7.0. Statistical analysis was done by using binary logistic regression and Standard error of proportion. **Results:** None of the women from both groups (primiparous and multiparous) gave breast feeding early according to the "guidelines for infant and young child feeding, Government of India, 2004". Present study showed positive effect of multiparity on early breast feeding initiation. Only 16% primiparous mothers had given first feed to newborn within 24 hours in comparison to multiparous mothers (50%). Odds (4.3) of having delayed breast initiation higher in nonworking primiparous than multiparous mothers. Difference in education of the mother in-laws had significant effect on the early initiation of the breast feeding as 94.67% mother in-laws of multiparous women were illiterate compared to 77.33% of primiparous mothers. Variables like history of previous abortion, previous neonatal deaths and caesarean delivery were significantly associated with delayed initiation of breast feeding in multiparous mothers compared to primiparous mothers. If in-laws of participants had expectation of male child and female child was born, it significantly delayed breastfeeding initiation more in primiparous mothers (55.35%) compared to multiparous mothers (35.29%). When asked the reason behind not initiating breast feeding early, all mothers of both group replied that it was due to lack of secretion of breast milk initially after delivery. **Conclusion:** Socio-demographic factors including lower education and expectation of male child by in- laws were more associated with delayed initiation breast feeding in primiparous mothers whereas obstetric problems were more associated with delayed initiation of breastfeeding in multiparous mothers.

Keywords: Initiation of breastfeeding, Multiparous mothers, Primiparous mothers, Educational status, Expectation of male newborn.

INTRODUCTION

Early breastfeeding initiation is very important for the health and development of the newborn. Ideally, baby should receive first breast feed as soon as possible, preferably within half an hour of normal delivery and in case of caesarean delivery breast feeding should start within 4-6 hours with support to mother^[1]. During this time colostrum, a yellowish precursor to mature breast milk, is secreted^[2], which has higher protein and lower fat content as compared to mature breast milk. Colostrum is very beneficial to the neonate^[3]. Regardless of these benefits, cultural attitudes about the acceptability of colostrum is an important component influencing a mother's decision about when to begin breastfeeding^[4].

It has been established that breastfeeding within an hour or two of delivery is associated with longer and more successful, exclusive breastfeeding^[5,6]. So timing of initiation of breast feeding is an important factor for a healthy baby. Apart from colostrums another important reason documented by N. Pandit *et al*

***Corresponding author:**

Dr. Mallika Chavada

Assistant Professor, Department of Community Medicine, GMERS Medical College, Gandhinagar, Gujarat- 382012, India

was that even though 21% mothers were interested, in giving early breast feeding they could not do so, due to delayed lactation^[7]. This lead to supplement of milk-substitutes to the neonate which may be harmful and interfere with exclusive breast feeding in the long run.

Milk secretion in initial phase is affected by various factors. Ksenia Bystrova et al. mentioned in her study that early milk secretion after the delivery is associated with parity of the mothers and early suckling by neonates^[8]. She found, the intensity of mother's perception of breast engorgement at one to three days after

birth was significantly more pronounced in multiparous compared to primiparous mother^[8]. Other studies have also suggested that initiation of breastfeeding was later in primiparous mothers^[9,10].

The present study was conducted to compare timing of initiation of breastfeeding and to find out factors affecting early initiation of breastfeeding in primi and multiparous mothers. The identification of determinants of delayed breastfeeding practices will help design targeted interventions to promote breastfeeding and the modification of National public health policy. If different factors for the breastfeeding practices in primiparous and multiparous mothers are found, different strategies can be used in these groups to encourage early initiation of exclusive breast feeding. If, other than unacceptability of colostrum any new factors are found, these too can be addressed.

MATERIAL AND METHODS

Study Type: Hospital based Prospective study

Study Area: Obstetrics and Gynaecology department, tertiary care hospital, Gujarat.

Duration: 2 months (August to September 2014)

Sample Size: According to national guideline for infant and young child feeding, 2004, delayed initiation of breastfeeding was found in 84% of postpartum mothers^[1].

By using formula,

$$n = (Z_{1-\alpha/2})^2 / p(1-p)$$

where confidence interval $(1-\alpha) = 95\%$

δ is 10% of p, So estimated sample size 75

We recruited 75 primigravida and 75 multigravida mothers for the study. So, total sample size was 150.

Delayed initiation of breast feeding means "for normal delivery breast feeding is not started within half an hour of normal delivery and in case of caesarean delivery breast feeding is not started within 4-6 hours with support to mother"^[1].

Study Group: We followed 75 primigravida mothers and 75 multigravida mothers from their third trimester antenatal period whose expected date of delivery will be within one month of the date of initiation of the project. Mothers were followed till they will deliver a child and discharge from the hospital.

Study Performa: The pre-structured pre-tested baseline questionnaire was used to identify feeding practices and to collect information on variables known or likely to be associated with breastfeeding initiation, including socio-demographic, biomedical etc.

Ethical Issue: Signed informed consent was obtained from all participants recruited in the study. The project received ethical approval from to the institutional ethics committee.

Study Procedure: Weight & height were measured by using standardized technique by trained investigators as suggested by Jelliffe^[11]. Classification of nutritional status was done by using Body Mass Index (BMI). BMI was derived by dividing one's weight in kilograms by the square of height in meters. Weight was measured with standard digital weighing machine. Height was measured using calibrated fixed scales while the subject stood bare feet.

Using aseptic precautions, Blood sample (2 ml in EDTA) was collected from all the participants by qualified laboratory technicians at accredited laboratory of pathology department of tertiary care hospital, Gujarat. Haemoglobin estimation was done by automated cell counter method. Grading of anemia done adopting WHO recommended classification^[12], and weight disorders were assessed on the basis of BMI^[13,14].

STATISTICAL ANALYSIS

Data entry and analysis was done in software Epi info version 7.0. Binary logistic regression and Standard error of proportion were used to compare the variables in primiparous and multiparous mothers which affect the early initiation of breast feeding.

RESULTS

The present study was conducted to compare factors that affect breast feeding initiation after delivery between primiparous and multiparous mothers. Total 150 mothers were enrolled for the study out of which, 75 were primiparous and 75 were multiparous mothers.

Table-1 shows both primi and multiparous mothers did not give first feed to child within one and half hour of normal delivery and within four hour of caesarean delivery. So, we found 100% delay in initiation of breastfeeding in both groups of mothers. But, significant difference was observed between primiparous and multiparous mothers in time of first feed given to the child after delivery. In primiparous mothers, only 16% mothers had given first feed within 24 hours, while almost half of multiparous mothers had given first feed within 24 hours. When asked the reason behind not initiating breast feeding early, all mothers of both group replied that it was due to lack of secretion of breast milk in initially.

Odds of having delayed initiation of lactation was four time higher in primiparous mothers as majority (72%) of primiparous mothers were in age group of 20-25 years followed by 25-30 years (21.3%). Compared to this, nearly half of multiparous mothers were in age group of 25-30 years. The difference was found to be statistically significant.

Household work was associated with delayed initiation of breast feeding more in primiparous (88%) compared to multiparous mothers (70%) and the difference was found to be statistically significant.

Difference in education of the mother in-laws had significant effect on the initiation of the breast feeding as 94.67% mother in-laws of multiparous women were illiterate compared to 77.33% of primiparous mothers.

Table- 2 shows, variables like history of previous abortion, previous child death after delivery, caesarean type of delivery were significantly more associated with delayed initiation breast feeding in multiparous mothers compared to primiparous mothers.

In table-3, We compared between primiparous and multiparous, if expectation was male child and female child born does it have any

effect on breast feeding initiation. Table shows that, expectation of male child by couple did not have any effect on breast feeding initiation in both groups. But if in-laws of participants had expectation

of male child and female child born that significantly delayed breastfeeding initiation more in primiparous mother (55.35%) compared to multiparous (35.29%) mothers.

Table 1: Comparison between primiparous and multiparous mothers regarding breast feeding initiation according to socio- demographic characteristics study population

Variable	Primiparous Mothers with delayed initiation of breast feeding (n=75)	Multiparous Mothers with delayed initiation of breast feeding (n=75)	Odds ratio	P Value
Time of first feed (hour)				
1 & 1/2 -24	12 (16.0%)	39 (52.0%)	0.41	0.00
24-48	22 (29.3%)	17 (22.7%)		
48-72	20 (26.7%)	17 (22.7%)		
>/= 72	21 (28.0%)	2 (2.7%)		
Age of mothers (years)				
< 20	3 (4.0%)	1 (1.33%)	3.36	0.00
20-24	54 (72.0%)	29 (38.7%)		
25-29	16 (21.3%)	36 (48.0%)		
30-35	2 (2.7%)	7 (9.3%)		
>/=35	0 (0.0 %)	2 (2.7%)		
Religion				
Hindu	72 (96%)	69 (92%)	2.48	0.17
Muslim	3 (4%)	6 (8%)		
Type of family				
Nuclear	21 (28%)	23 (30.67%)	0.78	0.37
Joint	54 (72%)	52 (69.33%)		
Education of participants				
Illiterate	14 (18.67%)	32 (42.67%)	0.76	0.19
Primary	40 (53.33%)	24 (32%)		
Secondary	17 (22.67%)	14 (18.67%)		
HS* & above	4 (5.33%)	5 (6.67%)		
Occupation of participants				
House wife	66 (88%)	52 (69.33%)	4.30	0.002
Working	9 (12%)	23(30.67%)		
Education of husband				
Illiterate	14(18.67%)	22(29.33%)	0.78	0.14
Primary	20 (26.67%)	27 (36%)		
Secondary	36 (48%)	19 (25.33%)		
HS* and above	5 (6.67%)	7 (9.33%)		
Education of father in laws				
Illiterate	63(84%)	66 (88%)	0.72	0.33
literate	12 (16 %)	9 (12%)		
Education of mother in laws				
Illiterate	58(77.33%)	71 (94.67%)	0.23	0.01
literate	17 (22.67%)	4 (5.33%)		
BPL Card				
Yes	50 (66.67%)	38 (50.67%)	1.14	0.58
No	25 (33.33%)	37 (49.33%)		

Table 2: Comparison between primiparous and multiparous mothers regarding breast feeding initiation according to characteristics of pregnancy/ delivery and newborn

Variable	Primiparous Mothers with delayed initiation of breast feeding (n=75)	Multiparous Mothers with delayed initiation of breast feeding (n=75)	Odds ratio	P Value
History of abortion Yes No	1(1.33%) 74 (98.67%)	9(12.0%) 66 (88.0%)	0.01	0.03
History of still birth Yes No	0(0.0%) 75 (100.0%)	3(4.0%) 72 (96.0%)	0.00	0.10
Previous neonatal death Yes No	2(2.67%) 73 (97.33%)	10(13.33%) 65 (86.67)	0.18	0.03
No of ANC visit <3 ≥ 3	13 (17.33%) 62 (82.67%)	8 (10.67%) 67 (89.33%)	1.21	0.09
Drug therapy for major illness Yes No	0(0.00%) 75 (100.0%)	5 (6.67%) 70 (93.33%)	2E+009	0.10
Body mass index(kg/m2) <18.5 18.5- 24.99 ≥ 25	6 (8.0%) 56 (74.7%) 13 (17.3%)	5 (6.7%) 48 (64.0%) 22 (29.3%)	1.65	0.12
Gestational age(week) <37 37-42 ≥ 42	5 (6.7%) 60 (74.7%) 10 (17.3%)	10 (13.3%) 53 (70.7%) 12 (16.0%)	1.38	0.33
Complication during pregnancy Yes No	1(1.33%) 74 (98.67%)	7(9.33%) 68 (90.67%)	0.13	0.06
Delivery Type Caesarean Normal	48 (64.0%) 27 (36.0%)	63(84.0%) 12 (16.0%)	3.50	0.001
Maternal Haemoglobin at delivery <11 gm/dl ≥11 gm/dl	51 (68.0%) 24 (32.0%)	53 (70.67%) 22 (29.33%)	0.94	0.86
Birth weight of newborn <2500 gm ≥2500 gm	13 (17.3%) 62 (82.67%)	13 (17.3%) 62 (82.67%)	1.00	1.00
Gender of new born Boy Girl	36(48.0%) 39 (52.0%)	35(46.67%) 40 (53.33%)	0.86	0.63
First feed Formula feed Yes No	60(80.0%) 15 (20.0%)	55 (73.33%) 20 (26.67%)	1.46	0.34
Child sucks Yes No	65 (86.67%) 10 (13.43%)	68 (90.67%) 7 (9.33%)	0.67	0.44

Table 3: Comparison between primiparous and multiparous mothers regarding breast feeding initiation according to expectation of male child

Variable	Primiparous mothers with delayed initiation of breast feeding	Multiparous mothers with delayed initiation of breast feeding	SEP	P Value
Expectation of male child by participant & female child born	29 (47.54%)	32(47.76%)	0.023	0.88
Expectation of male child by husband & female child born	29 (47.54%)	33 (47.82%)	0.021	0.89
Expectation of male child by in-laws & female child born	31 (55.35%)	24 (35.29%)	4.227	0.039

DISCUSSION

Present hospital based prospective study was comparative study between primiparous and multiparous mothers to identify and compare the determinants for delayed initiation of breast feeding.

In present study, Primiparous mothers and their husband were more educated compared to multiparous mothers. In both group, majority of in laws of the mothers were illiterate. Nearly 2/3 women in both group were BPL card holder. As the present study was government hospital based, majority of the participant were from the low socio- economic class which explains lower education of participants, their husband and their in-laws.

According to the guideline for infant and young child feeding, Government of India, early initiation breast feeding means within one and half hour for normal delivery and within four hours for caesarean type of delivery with support to the mothers^[1]. According this guideline, only 15.8% newborns are breastfed within one hour of birth and only 37.1% within one day of birth in India^[1]. Another study conducted by N. Pandit documented that only 6% of women gave breast feeding within two hours and 32% mothers started feeding after 24 hours^[7].

According to above mentioned guideline none of the women from both groups (primiparous and multiparous) gave breast feeding early. Present study showed positive effect of multiparity on early breast feeding initiation. Nearly ¼ primiparous women started breast feeding after 72 hours while ½ multiparous women gave first feed within 24 hours only. So, early initiation of breast feeding should be encouraged in both groups by giving support and counselling. But, extra efforts are needed in primiparous mothers.

Other studies also mentioned breastfeeding initiation was later in primiparous mothers than multiparous mothers^[9, 10]. Ksenia Bystrova et al. mentioned in her study the intensity of mother's perception of breast engorgement from one to three days after birth was significantly more pronounced in multiparous women compared to primiparous mothers^[8]. Lessen *et al.*^[15] reported that previous breastfeeding experience was positively associated with both intention and initiation of early breast feeding. So, experience of multiparous mothers can be shared with primiparous for early breast feeding initiation.

All the women in both the group mentioned reason for not starting early breast feeding was delayed milk secretion. N. Pandit *et al.* mentioned in his study, even though 21% mothers were interested in giving early breast feeding they could not because of delayed lactation^[7].

Difference in education mother in-laws had significant effect on the initiation of the breast feeding. This factor affect primiparous more than multiparous mothers. This indicates that for early breast feeding initiation, counselling of not only participants but counselling of the mother in-laws (especially of the primiparous mothers) were also needed in order to support and encourage mothers for initiation of early breast feeding.

Household work caused delayed initiation of breast feeding more in multiparous mothers than primiparous.

Variables like history of previous abortion, previous neonatal death were significantly associated with delayed initiation breast feeding in multiparous compared to primiparous mothers.

The above two factors made multiparous women at higher risk for caesarean type of delivery which itself is an independent factor for

delayed initiation of breast feeding in multiparous compared to primiparous mothers. It highlights that women with bad obstetric history should be counselled from initial phase of pregnancy for early breast feeding and mothers with caesarean section need encouragement and extra support for initiating early breastfeeding, especially in multiparous women.

Due to delayed initiation of breast feeding, formula feeds are given to newborn in early phase of life and so exclusive breast feeding is not maintained. It makes the newborn vulnerable to various infections. In the present study, other milk substitute as first feed was given to 80% primiparous and 73% multiparous mothers' newborns which was very high compared to previous studies in India that reported about 45% of infants were prelacteally fed^[16]. Researchers suggested that prelacteal feeding results in the baby receiving insufficient breast milk, possibly leading to lactation failure^[17], and that giving prelacteal glucose to the infant weakens the suckling stimulus^[18]; thereby further delaying initiation of breast feeding. The practice of prelacteal feeding is of great concern in this population and should be discouraged.

Expectation of male child by the couple with birth of a female child did not show any effect on initiation of early breast feeding in both groups. However, if the in-laws expectation was male and if a female child was born, it caused delayed initiation in primiparous compared to multiparous mothers. Expectation of male child by in-laws causing emotional pressure on mothers might lead to delayed milk secretion especially in primiparous mothers.

The limitation of the present study is that it is a hospital based study. So, room of generalisation of results are limited. However, it is the largest obstetric hospital in this district, primarily serving mothers from low socioeconomic and sociocultural status. Therefore, the outcome of this research may be used for constituting political strategies for citizens from low socioeconomic status. Our results cannot be extrapolated to higher socio economic groups, where other factors may play different roles. It is necessary to perform further research for longer duration, across socioeconomic classes addressing the determinants of delayed initiation of breast feeding in Indian context in order to formulate strategies.

CONCLUSION

Present study showed parity had positive effect on early initiation of breast feeding. Socio-demographic factors were more associated with delayed initiation of breastfeeding in primiparous mothers compared to multiparous mothers. Obstetrics factors were more associated with delayed initiation of breastfeeding in multiparous mothers compared to primiparous mothers. Expectation of male child by in-laws had negative effect on early initiation of breast feeding especially in primiparous mothers. The practice of prelacteal feeding is of great concern in this population and should be discouraged. Identifying mothers at risk of delayed breastfeeding initiation should be the target for breastfeeding promotion during prenatal care. All women should be encouraged by giving extra care and counselling to breastfeed soon after birth, with extra attention paid to those women at higher risk of not initiating timely breastfeeding.

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CONFLICT OF INTEREST: None.

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