



## **Effect of Fenugreek on Lactation among Postnatal Women's of Selected Hospital at Vadodara**

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### **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

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### **ABSTRACT**

**Background of the Study:** Breast feeding is the pleasant vitamins for infants. Most of the postnatal moms face the trouble of inadequate breast milk which influences the wellness of an infant. Hence the researcher had taken up this study, used fenugreek among the postnatal mother who has insufficient breast milk secretion as an effective way to boost the production of breast milk.

**Methods:** A quantitative research approach with experimental pre-test post-test control group design was used to assess effect of fenugreek on lactation among postnatal woman. The study was conducted among 60 postnatal mothers in a selected hospital, Vadodara.

**Results:** The present study revealed that in experimental group in pre-test, majority 25(83.3%) had insufficient lactation and only 5(16.7%) had sufficient lactation while in post-test 20(66.7%) had sufficient lactation and 10(33.3%) had insufficient lactation. The impact of fenugreek on lactation amongst experimental group turned into examined through the usage of paired t test with obtained t value ( $t=8.348$ ,  $df=29$ ,  $p=0.001$ ) turned into statistically highly significant at  $p<0.05$  level of significance. The post-test lactation revealed that in control group mean score was  $22.97\pm 3.755$  and in experimental group mean score was  $30.03\pm 5.334$  with mean difference of 7.06 with obtained t value ( $t=5.934$ ,  $df=58$ ,  $p=0.001$ ) was statistically significant at  $p<0.05$  level. The association between pre interventions lactation of postnatal woman of experimental and control group with

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selected demographic variables such as age, educational status, occupational status, religion, residency, type of family and food habits were found statistically not significant at  $p < 0.05$  level with pre interventions lactation of postnatal woman of experimental and control group.

**Conclusion:** The overall effect of fenugreek on lactation among experimental group was tested by using paired t test with obtained t value ( $t=8.348$ ,  $df=29$ ,  $p=0.001$ ) was statistically highly significant at  $p < 0.05$  level of significance. Study findings revealed that fenugreek was effective in promoting lactation of postnatal mothers in experimental group as compared to control group.

*Keywords: Fenugreek; postnatal mother; lactation.*

## 1. INTRODUCTION

### 1.1 Background of the Study

Fenugreek, a sort of seed can help increase breast milk supply. When a women's is breastfeeding, her milk supply sometimes might decrease because of stress, fatigue, or a spread of other factors. If you're feeling like your supply is dwindling, consuming fenugreek is an easy, effective thanks to boost the assembly.

Exclusive breastfeeding for the primary six months of life has been shown to confer substantial benefits to the women and infant [1]. Therefore, global health authorities recommend exclusive breastfeeding for all infants within the first six months of life which could then be continued alongside other solid foods as long because the women and her infant desire [2]. Per recent estimates, only 37% of infants younger than six months old of age are nourished exclusively on human milk in low- and middle-income countries [1].

Highly regarded by Hippocrates and other Greek and Roman physicians, fenugreek is one in all the oldest medicinal herbs. Ancient physicians mixed the seeds with water or made ointments to treat external wounds and abscesses. The herb was also used internally to treat fevers and respiratory and intestinal ailments furthermore on ease childbirth. Indian women are fenugreek seeds to extend their milk production [3].

Fenugreek was delivered to the New World as a folk remedy by early settlers. It became the most important ingredient of Lydia E. Pinkham's vegetable Compound, a well-liked 19<sup>th</sup> century cure-all for female complaints [3].

In classical views, herbal remedies are thought to be safe. Probably, this belief has emerged by advertising herbal remedies as mild, gentle, safe, and having unique attributes that are not found in prescription medications [4].

## 2. METHODOLOGY

### Research approach

Quantitative approach.

### Research design

Quasi experimental pre-test post-test control group design.

### Variables under the study

#### Independent variable

Fenugreek seeds administration.

#### Dependent variable

Perception of breast milk secretion by postnatal mother.

#### Research setting

The sample of the study was selected from Parul Sevasharam Hospital, Vadodara.

#### Population

Postnatal women (primigravida)

#### Sample and sampling technique

The samples were selected by non-probability sampling method.

#### Data collection techniques and tools

Interview method (Hill & Humenick 1989) – Perceived insufficient milk questionnaire items and responses.

## 3. RESULTS

Table 1 Depicts.

Table 1 depicts the frequency and percentage distribution of the demographic variables of postnatal women. As per chi square analysis it shows that there is no significant

difference between experimental and control group in relation to their demographic characteristics.

Table 2 depicts the frequency and percentage distribution of the Obstetric variables of postnatal women. As per chi square analysis it shows that there is no significant difference between experimental and control group in relation to their Obstetric characteristics.

Fig. 1 depicts the distribution of pre-test and post-test level of lactation of postnatal women in control group and experimental group. In control group pre-test majority 27 (90%) had insufficient lactation and only 3 (10%) had sufficient lactation while in post-test 24 (80%) had sufficient lactation and 6(20%) had insufficient lactation. Results in experimental group revealed that in pre-test majority 25(83.3%) had

insufficient lactation and only 5 (16.7%) had sufficient lactation while in post-test 20 (66.7%) had sufficient lactation and 10 (33.3%) had insufficient lactation.

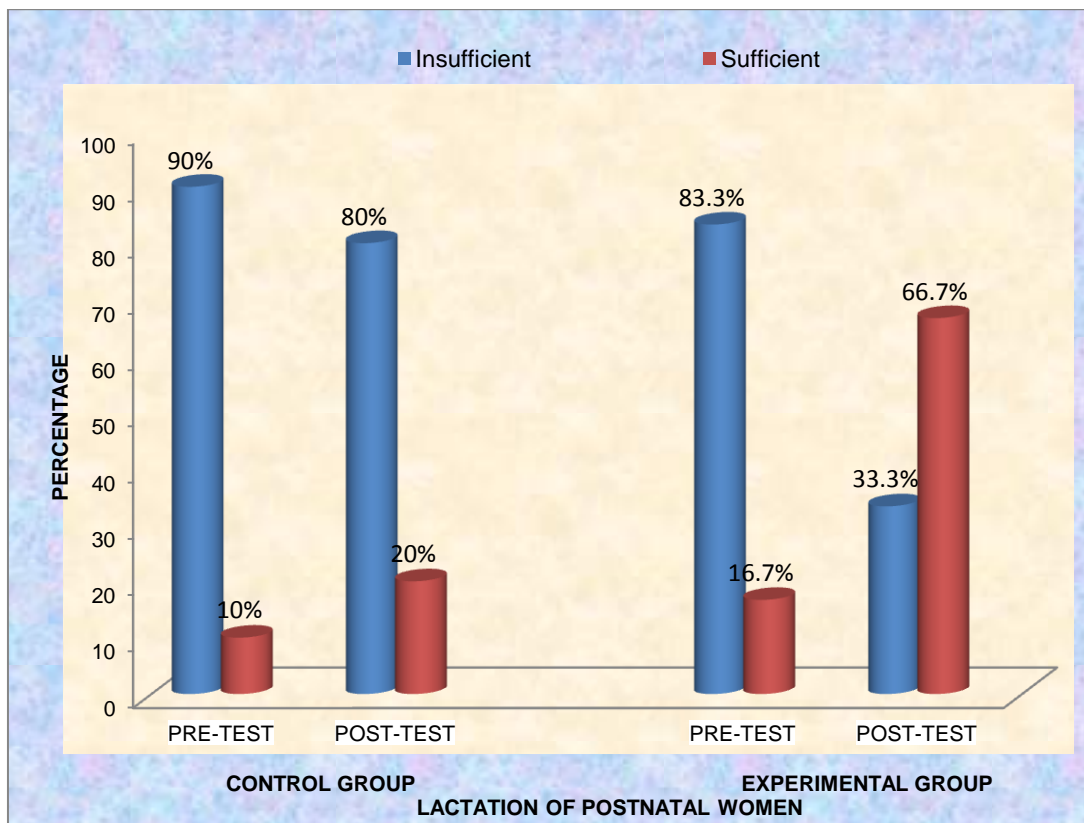
Fig. 2 depicts the effect of fenugreek on lactation of postnatal women among experimental group. In experimental group pre intervention score was  $20.10 \pm 5.313$  and post intervention score was  $30.03 \pm 5.334$  with mean difference of 9.93. The effect of fenugreek on lactation among experimental group in experimental group was tested by using paired t test with obtained t value ( $t=8.348$ ,  $df=29$ ,  $p=0.001$ ) was statistically highly significant at  $p<0.05$  level of significance. Findings revealed that fenugreek was effective in improving lactation of postnatal women's in experimental group. Hence  $H_1$  is accepted.

**Table 1. Frequency and percentage distribution of the demographic variables of postnatal women in Experimental and control Group n=60**

Demographic variables		Control group		Experimental Group		df	p value
		f	%	F	%		
<b>Age</b>	21-25yrs	11	36.7	8	26.7	3	0.109 <sup>NS</sup>
	26-30yrs	12	40	12	40		
	31-35yrs	4	13.3	10	33.3		
	Above35yrs	3	10	0	0		
<b>Educational status</b>	Uneducated	8	26.7	7	23.3	3	0.175 <sup>NS</sup>
	Primary education	11	36.6	13	43.4		
	Secondary education	5	16.7	9	30		
	Higher Secondary	6	20	1	3.3		
<b>Occupational status</b>	Home maker	15	50	16	53.4	2	0.960 <sup>NS</sup>
	Employed	11	36.7	10	33.3		
	Self employed	4	13.3	4	13.3		
<b>Religion</b>	Hindu	12	40	15	50	3	0.387 <sup>NS</sup>
	Muslim	10	33.3	6	20		
	Christian	5	16.7	8	26.7		
	Other	3	10	1	3.3		
<b>Residency</b>	Urban	15	50	12	40	1	0.436 <sup>NS</sup>
	Rural	15	50	18	60		
<b>Type of family</b>	Nuclear	17	56.7	16	53.3	1	0.795 <sup>NS</sup>
	Joint	13	43.3	14	46.7		
<b>Food habits</b>	Vegetarian	16	53.3	10	33.3	2	0.220 <sup>NS</sup>
	Non-vegetarian	8	26.7	14	46.7		
	Mixed	6	20	6	20		

**Table 2. Frequency and percentage distribution of the Obstetric related variables of postnatal women in Experimental and control Group**

Obstetric related variables		Control Group		Experimental Group		df	p value
		F	%	F	%		
Newborn feeding pattern	Mother milk	14	46.7	19	63.3	1	0.194 <sup>NS</sup>
	Top feeding	16	53.3	11	36.7		
	A and B	0	0	0	0		
Frequency of breast feeding to baby per day	2-3 times/day	7	23.3	3	10	3	0.487 <sup>NS</sup>
	3-5 times/day	10	33.3	10	33.3		
	5-7 times/day	11	36.7	13	43.4		
	More than 7 times/day	2	6.7	4	13.3		
Knowledge about complimentary alternative therapies to promote mother milk secretion	Yes	8	26.7	2	6.7	1	0.057 <sup>NS</sup>
	No	22	73.3	28	93.3		
Consumption of any one of the galactogue helps to increase mother milk promotion	Fenugreek	11	36.6	5	16.7	4	0.078 <sup>NS</sup>
	Ginger	5	16.7	3	10		
	Garlic	5	16.7	2	6.7		
	Cumin	2	6.7	6	20		
	None of the above	7	23.3	14	46.7		



**Fig. 1. Distribution of pre-test and post-test level of lactation of postnatal women in control group and experimental group**

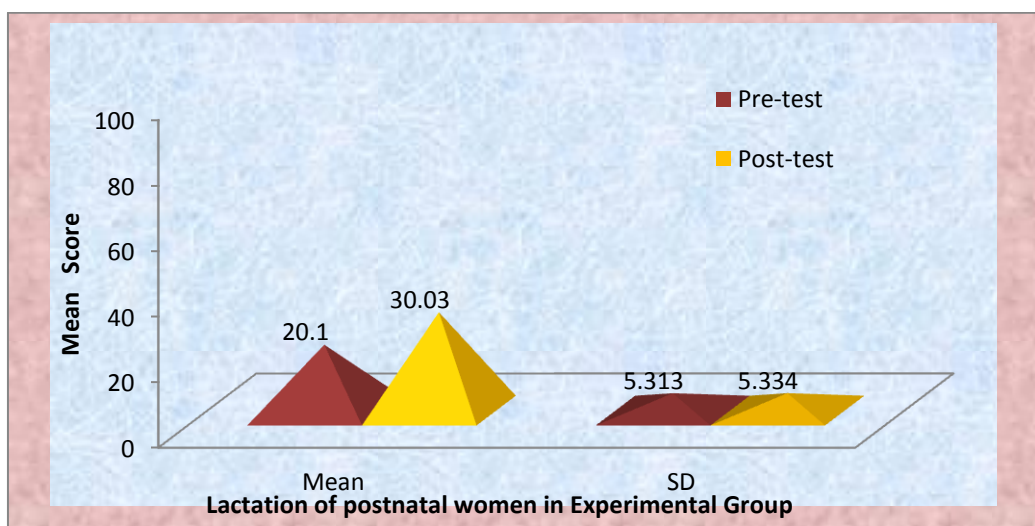


Fig. 2. To evaluate the effect of fenugreek on lactation of postnatal women among experimental group

Table 3. To compare the lactation of postnatal women between control group and experimental group. (n=60)

Comparison	Control group Mean±SD	Experimental group Mean±SD	Mean D	t value	Df	p value
Pre-test	20.33±4.278	20.10±5.313	0.23	0.187	58	0.852 <sup>NS</sup>
Post-test	22.97±3.755	30.03±5.334	7.06	5.934	58	0.001*

\*P<0.05 level of significance, NS=Not significant

Table 3 depicts the comparison of lactation of postnatal women between control and experimental group. Results showed that in pre-test control group mean score was 20.33±4.278 and in experimental group mean score was 20.10±5.313 with mean difference of 0.23 with obtained t value (t=0.187, df=58, p=0.085) was statistically non-significant. Results of post-test lactation revealed that in control group mean score was 22.97±3.755 and in experimental group mean score was 30.03±5.334 with mean difference of 7.06 with obtained t value (t=5.934, df=58, p=0.001) was statistically significant at p<0.05 level. Study finding revealed that fenugreek was effective in promoting lactation of postnatal women's in experimental group as compared group.

Table 4 depicts the association between pre interventions lactation of postnatal women of

control group with selected demographic variable which was tested by using chi-square test. Result showed that demographic variables such as age, educational status, occupational status, religion, residency, type of family and food habits were found statistically not significant at p<0.05 level with pre interventions lactation of postnatal women's of control group. Hence a hypothesis H2 is rejected.

Table 5 depicts the association between pre interventions lactation of postnatal women's of experimental group with selected demographic variable which was tested by using chi-square test. Result showed that demographic variables such as age, education status, occupational status, religion, residency, type of family and food habits were found statistically not significant at p<0.05 level with pre interventions lactation of postnatal women's of experimental group.

**Table 4. Association between pre intervention lactation level of postnatal woman of control group with selected demographic variable**

Demographic variables		Pre-test Lactation		Chi value	df	p value
		Insufficient	Sufficient			
Age	21-25yrs	10	1	1.380	3	0.710 <sup>NS</sup>
	26-30yrs	10	2			
	31-35yrs	4	0			
	Above 35 yrs	3	0			
Educational status	Uneducated	7	1	2.096	3	0.553 <sup>NS</sup>
	Primary education	9	2			
	Secondary education	5	0			
	Higher secondary	6	0			
Occupational status	Home maker	13	2	2.407	2	0.301 <sup>NS</sup>
	Employed	11	0			
	Self employed	3	1			
Religion	Hindu	11	1	2.407	3	0.492 <sup>NS</sup>
	Muslim	9	1			
	Christian	5	0			
	Other	2	1			
Residency	Urban	14	1	0.370	1	0.543 <sup>NS</sup>
	Rural	13	2			
Type of family	Nuclear	16	1	0.739	1	0.390 <sup>NS</sup>
	Joint	11	2			
Food habits	Vegetarian	15	1	0.602	2	0.740 <sup>NS</sup>
	Non-vegetarian	7	1			
	Mixed	5	1			

**Table 5. Association between pre intervention levels of lactation of postnatal woman of experimental group with selected demographic variable**

Demographic variables		Pre-test Lactation		Chi value	df	p value
		Insufficient	Sufficient			
Age	21-25yrs	6	2	0.720	2	0.698 <sup>NS</sup>
	26-30yrs	10	2			
	31-35yrs	9	1			
	Above 35 yrs	--	--			
Educational status	uneducated	6	1	7.829	3	0.050 <sup>NS</sup>
	Primary education	13	0			
	Secondary education	5	4			
	Higher secondary	1	0			
Occupational status	Home maker	15	1	4.530	2	0.104 <sup>NS</sup>
	Employed	8	2			
	Self employed	2	2			
Religion	Hindu	13	2	0.720	3	0.868 <sup>NS</sup>
	Muslim	5	1			
	Christian	6	2			
Residency	Urban	9	3	1.000	1	0.317 <sup>NS</sup>
	Rural	16	2			
Type of family	Nuclear	13	3	0.107	1	0.743 <sup>NS</sup>
	Joint	12	2			
Food habits	Vegetarian	9	1	2.949	2	0.229 <sup>NS</sup>
	Non-vegetarian	10	4			
	Mixed	6	0			

## 4. DISCUSSION

### Objective 1

To assess the lactation among postnatal mother of Control and Experimental group.

Present study results showed that in control group pre-test majority 27(90%) had insufficient lactation and only 3(10%) had sufficient lactation while in post-test 24(80%) had sufficient lactation and 6(20%) had insufficient lactation. In experimental group revealed that in pre-test majority 25(83.3%) had insufficient lactation and only 5(16.7%) had sufficient lactation while in post-test 20(66.7%) had sufficient lactation and 10(33.3%) had insufficient lactation.

A similar study was conducted by Bhuvaneshwari to assess the effectiveness of fenugreek consumption on lactation among postnatal women. Results revealed that up to speed group, 18(60%) of them were satisfied and 12(40%) of them were unsatisfied where as within the experimental group, 23(76.7%) of them were satisfied and seven (23.3%) of them were unsatisfied. Up to the mark group 14(46.7%) of them had sufficient milk secretion and 16(53.3%) of them had insufficient milk secretion where as in experimental group 4(13.3%) of them were had insufficient milk secretion and 26(86.7%) of them were had sufficient breast milk secretion [5].

### Objective 2

To evaluate the effect of fenugreek on lactation among experimental group.

Study findings revealed that in experimental group pre intervention score was  $20.10 \pm 5.313$  and post intervention score was  $30.03 \pm 5.334$  with mean difference of 9.93. The effect of fenugreek on lactation among experimental group in experimental group was tested by using paired t test with obtained t value ( $t=8.348$ ,  $df=29$ ,  $p=0.001$ ) was statistically highly significant at  $p < 0.05$  level of significance.

The study was conducted by Sevrin T et al. to assess the impact of fenugreek on milk production among breast feeding mothers. Results revealed that in pre-intervention mean score was  $1.38 \pm 0.09$  where as in post intervention was  $2.38 \pm 0.10$  was statistically significant ( $p < 0.04$ ) [6].

### Objective 3

To compare the lactation between control group and experimental group.

Results showed that in pre-test control group mean score was  $20.33 \pm 4.278$  and in experimental group mean score was  $20.10 \pm 5.313$  with mean difference of 0.23 with obtained t value ( $t=0.187$ ,  $df=58$ ,  $p=0.085$ ) was statistically non-significant.

Results of post-test lactation revealed that in control group mean score was  $22.97 \pm 3.755$  and in experimental group mean score was  $30.03 \pm 5.334$  with mean difference of 7.06 with obtained t value ( $t=5.934$ ,  $df=58$ ,  $p=0.001$ ) was statistically significant at  $p < 0.05$  level. Study findings revealed that fenugreek was effective in promoting lactation of postnatal mothers in experimental group as compared group.

Abdou R.M, Fathey M conducted a study to assess the effect of fenugreek supplementation on expressed breast milk volume and prolactin levels among postnatal mothers. Results showed that volume of expressed breast milk was significantly higher in the fenugreek group than the control group on third day with mean of  $274.60 \pm 46.97$  and  $246.37 \pm 46.62$  ml respectively was statistically significant ( $p=0.023$ ). A significant difference in prolactin level was observed between both groups on day three with mean score of  $134.53 \pm 17.35$  in fenugreek group and  $152.77 \pm 18.46$  in control group was significant ( $p < 0.001$ ) [7].

Khan T.M, Chia Wu D, Dolzhenko A conducted a study to assess the effect of fenugreek administered to lactating women. Findings revealed that consumption of fenugreek significantly increased amount of the produced breast milk [ $11.11$ , CI 95%  $6.77-15.46$ ] significant ( $p < 0.01$ ) [8].

Salarfard M et al conducted a study to assess the effect of fenugreek on breast feeding adequacy among mothers. Findings revealed that in fenugreek group on increased breast milk production was observed on days 1, 3, and 5 as compared to control group was statistically significant ( $p = 0.001$ ). The results showed a positive relationship between fenugreek consumption and increased breast milk production and neonatal weight gain [9].

### Objective 4

To find out association between pre interventions lactation of postnatal woman of control group and experimental group with selected demographic variable.

Result showed that demographic variables such as age, educational status, occupational status, religion, residency, type of family and food habits were found statistically not significant at  $p < 0.05$  level with pre interventions lactation of postnatal woman of experimental group and control group.

Abdou R.M, Fathey M (2018) conducted a study to assess the effect of fenugreek supplementation on expressed breast milk volume and prolactin levels among postnatal mothers. Results showed that age, previous lactation, number of pregnancy, type of delivery, infant gender, nutrition of mothers were statistically non significant in experimental group and control group.

The overall effect of fenugreek on lactation among experimental group was tested by using paired t test with obtained t value ( $t=8.348$ ,  $df=29$ ,  $p=0.001$ ) was statistically highly significant at  $p < 0.05$  level of significance.

## 5. CONCLUSION

The most common problems reported by lactating mothers are insufficient milk production. The present study results showed that fenugreek was effective in improving lactation of postnatal mothers. Study findings concluded that fenugreek consumption has impact on increasing breast milk volume and can be used for mother satisfaction and reassurance in the early stages of lactation. The study suggested that fenugreek is considered an effective product to maintain the breast milk production and improve its adequacy as well as promote infants' growth and health.

## CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

Ethical approval was obtained from Parul University institutional ethical committee with the approval No. PUIECHR/PIMSR/00/081734/3507.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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