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Women-Led Lactation Support in Rural India: A Community-based Model for Breastfeeding Support and Early Infant Growth-Short Report

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ABSTRACT: Breastfeeding is a cornerstone for infant growth and survival yet rural India continues to face challenges like delayed initiation of feeding, discontinuation, limited access to government support and lactation counsellors. Beyond these, several misconceptions and myths prevail, leading to poor lactation practices thereby impacting both mother and the infant. This study presents an innovative women-led lactation support model aimed at improving neonatal health by women of the rural society. This project not only targets neonatal nutrition outcomes but also emphasizes the women empowerment through capacity building and employability. Following the Health Belief Model and Empowerment theory, the project has adopted 300 mother-infant dyads across rural Chikkaballapur, Karnataka. Ten rural girls trained as lactation counsellors supported a set of mother-infant dyads throughout the first 42 days ensuring extensive breastfeeding and by bringing the community out from misconceptions. Infant weight gain, maternal breastfeeding practices were assessed systematically and compared with a control group. The preliminary findings proved improved infant health and maternal breastfeeding practices. This model is a scalable and sustainable strategy that integrates with the rural health system. The findings support the aim of improving maternal knowledge and fostering women-led community development aligning with SDG 3,4 and 5. Further research focus on expanding this model to a larger rural population and replicating it across districts and states to achieve a global impact.

INTRODUCTION

Breastfeeding is the cornerstone of early childhood nutrition and development providing the early postnatal period, with the study specifically following mothers and infants for 42 days, also known as the crucial stages. Despite extensive public campaigns, rural India continues to face challenges in achieving recommended breastfeeding practices. Delayed initiation, early discontinuation, inadequate counselling and widespread misconceptions persist due to limited skilled lactation support education. These gaps contribute to suboptimal infant growth and preventable neonatal morbidity. This study proposes a women-led intervention aimed at early neonatal weight gain through structured lactation counselling delivered by trained lactation counsellors. The focus of the research is to enhance maternal-infant health outcomes while simultaneously empowering young women through skill development, economic opportunity, and leadership training. Rooted in Empowerment Theory and the Health Belief Model, this community-based study seeks to bridge critical knowledge-practice gaps in breastfeeding by creating a cadre of a team of trained lactation supporters. These girls have undergone a three-month training program covering lactation practices and management. This dual-benefit approach has the potential to be replicated in national and state-level maternal and child health strategies. Meshram et al., (2018) reported that only 36 % infants received proper breastfeeding in their early life that is within one hour post birth and until 6 months. This report was analyzed and collected from ten different states of India. McGuinness et al., (2025) in their cross sectional study on the KAP of primary health workers of New Zealand has reported a limited breastfeeding knowledge and practices. There are several studies on

knowledge and significance of health practitioners and workers on breastfeeding and it reports poor knowledge and less awareness. Dykes (2006) have reported several constraints of health practitioners upon training the new mother on breastfeeding and one challenge was the cultural context. Gavine et al., (2016) published a systematic review on KAP of healthcare practitioners and reported that many workers lacked necessary knowledge, attitude, skill and practices on breastfeeding. Stiller et al., (2020) have reported several rural communities encouraging the discard of Colostrum before breastfeeding the infant. There are reports on the positive influence of community based counselling team on reaching good breastfeeding practices in new mothers (Haider et al., 2000). Integrating grassroots skill-building with measurable health outcomes, contributing to women-led development and addresses multiple Sustainable Development Goals (SDGs), including SDG 2 (Zero Hunger), SDG 3 (Good Health and Well-being), and SDG 5 (Gender Equality). The work aims to produce policy-relevant data, a scalable implementation model, and training modules that can be adopted by public health programs. This study is both a public health and social empowerment initiative, showcasing the transformative potential of young women in rural India as change agents in maternal and child healthcare.

METHODOLOGY

Study design and site

The research adopts a community based sampling strategy with total of 300 dyads and a control group basically selected from rural society, that is the villages around Chikkaballapur, Karnataka, India.

Participants inclusion/exclusion criteria

The trained rural women/ lactation counselors will counsel a set of mother-child dyad of 300 sample size. The trainees will be divided into groups and sent around different villages with new mothers. A matched control group were maintained around the same villages of study how were exempted from lactation counselling. Evaluation will be conducted based on maternal age, socio-economic status, parity, infant birth weight and psychological status of new mother. The design implemented for study would be a quasi-experimental design study. The sample size is adequate for detecting meaningful differences in early neonatal weight gain and behavioral outcomes with appropriate statistical analysis. This approach facilitates rich, real-world insights while ensuring scientific rigor and replicability in similar rural health settings.

Inclusion criteria: mothers who delivered full-term, single live infant; willingness to participate in follow-up visits.

Exclusion criteria: preterm births, multiple pregnancies, infant with congenital abnormalities and lactation inhibiting conditions of mother.

Training module for rural women

A culturally contextualized lactation counseling manual for rural youth, including modules on communication and behavioural change techniques already developed will be made available officially to the trainees. They underwent a three-month structured training program and will be certified as lactation counsellors post successful completion.

Intervention

Each lactation support counsellor was deployed to nearby rural villages each assigned with 10 mother-infant dyads to provide counselling for the next 42 days which includes the following intervention procedure:

Initial visit- within 48 hours of delivery to guide on latching techniques, early initiation of feeding, diet and significance.

Follow-up visits- At intervals of 7,14,28 and 42 days to monitor the frequency of feeding, infant weight.

The control group were exempted from lactation support and received routine maternal and health care services available at PHCs.

Data collection tools

The data collection was performed with pre- validated structured questionnaires and weight monitoring charts. Infant weight was recorded at all intervals of follow-up visits. Changes in maternal breastfeeding knowledge were analyzed. Early breastfeeding initiation and exclusivity were also analyzed.

The estimation of the sample size was based on:

- Average weight increase of 100- 200 grams in the initial 42 days.
- Standard deviation of 200 grams.
- 80 percent power and significance level of 0.05.
- Allowance for a 10% dropout rate.

Statistical analysis methods

Data was summarized using basic statistical tools- mean, SD and percentage. Comprehensive data analysis to be performed post final findings from large population.

Ethics

Ethical approval for the study was obtained from the Institutional Ethics Committee of Sri Madhusudan Sai Institute for Medical Science and Research. Written informed consent was obtained from all participating mothers and counsellors. Confidentiality was maintained throughout data collection and reporting.

RESULTS

Quantitative results (weight gain trends, initiation and exclusivity rates)

The women-led lactation support model had promising results both on the neonatal and maternal practices. The trained Lactation Support Agents (LSAs) have successfully interacted with the mothers and have guided them on a regular basis regarding early initiation and exclusive breastfeeding. Mothers in the intervention group exhibited significant change in breastfeeding confidence, frequency, and shaping of appropriate methods as opposed to the control group. Observations in the field revealed that most mothers began breastfeeding during the first hour after childbirth, which was quite a radical change in behavioral trends where the delay was prevalent. The mothers also indicated that they were less dependent on the prelacteal feeds, and that they were more aware about the significance of colostrum. The follow-up of infants within the 42 days showed a consistent and healthier weight gain in the group that was under intervention. Even though the research used simple descriptive statistics, the trends that were observed over time were consistent and all showed improved neonatal growth results in groups that were assisted by LSAs as opposed to those that were given regular care. Besides the maternal and infant health benefits, the project affected the socio-economic setting significantly. The ten rural girls who were trained as LSAs were able to develop better communication, counselling, and problem-solving skills and this increased their self-efficacy and employability. There was overwhelming positive feedback about the community support system, with mothers and local health workers enjoying the ease and cultural sensitivity of this support system. Overall, the project showed that lactation support by women can be implemented successfully and be effective in rural areas. This model has a dual advantage of enhancing the nutrition of the newborn with the benefit of enhancing the empowerment of the rural women making it a viable strategy to be incorporated into the already in place maternal and child health programs. The linear mixed-effects model demonstrated substantial explanatory capacity, with a marginal R^2 of 0.483 and conditional R^2 of 0.916. The model was statistically significant (likelihood-ratio $\chi^2 = 4457.83$, $p < .001$).

Table 1. Estimated marginal mean infant weight across the 42-day follow-up

Estimate Marginal Means - Day					
				95% Confidence Intervals	
Day	Mean	SE	df	Lower	Upper
D0	2793	44.8	496	2705	2881
D14	2823	44.8	496	2735	2911
D21	3082	44.8	496	2994	3170
D28	3369	44.8	496	3281	3457
D35	3683	44.8	496	3594	3771

D42	3956	44.8	496	3868	4045
D7	2654	44.8	496	2566	2743

Table 2. Fixed effects of time and NICU admission on longitudinal infant weight

Fixed Effects Omnibus Tests				
	F	df	df (res)	p
Day	738.9221	6	2214	<.001
NICU	26.7407	1	369	<.001

Table 3. Fixed-effect estimates for changes in infant weight relative to D0

Parameter Estimates (Fixed coefficients)								
				95% Confidence Intervals				
Names	Effect	Estimate	SE	Lower	Upper	df	t	p
(Intercept)	(Intercept)	3194.33	41.6	3112.8	3275.9	369	76.8078	<.001
Day1	D14 - D0	29.37	25.6	-20.8	79.6	2214	1.1474	.251
Day2	D21 - D0	288.45	25.6	238.3	338.7	2214	11.2683	<.001
Day3	D28 - D0	575.63	25.6	525.4	625.8	2214	22.4867	<.001
Day4	D35 - D0	889.19	25.6	839.0	939.4	2214	34.7356	<.001
Day5	D42 - D0	1163.06	25.6	1112.9	1213.3	2214	45.4341	<.001
Day6	D7 - D0	-138.92	25.6	-189.1	-88.7	2214	-5.4267	<.001
NICU	Yes - No	-387.62	75.0	-534.6	-240.6	369	-5.1711	<.001

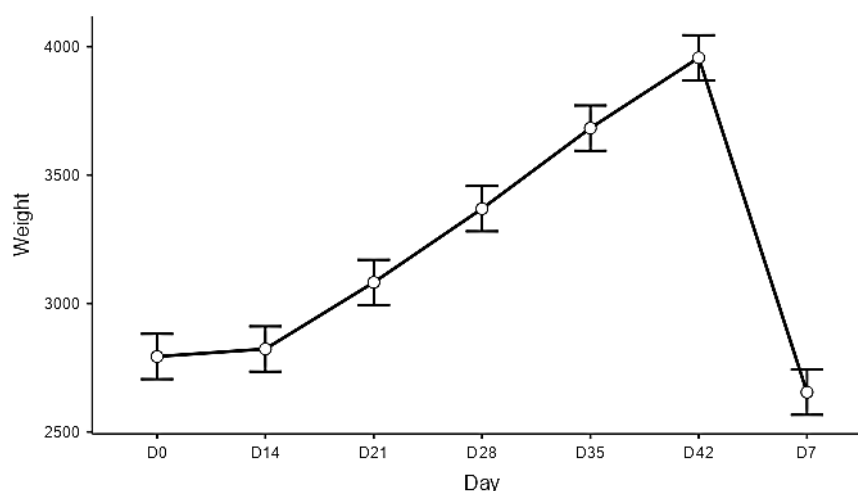


Figure 1. Longitudinal changes in infant weight during the first 42 days of life

ANC=Yes

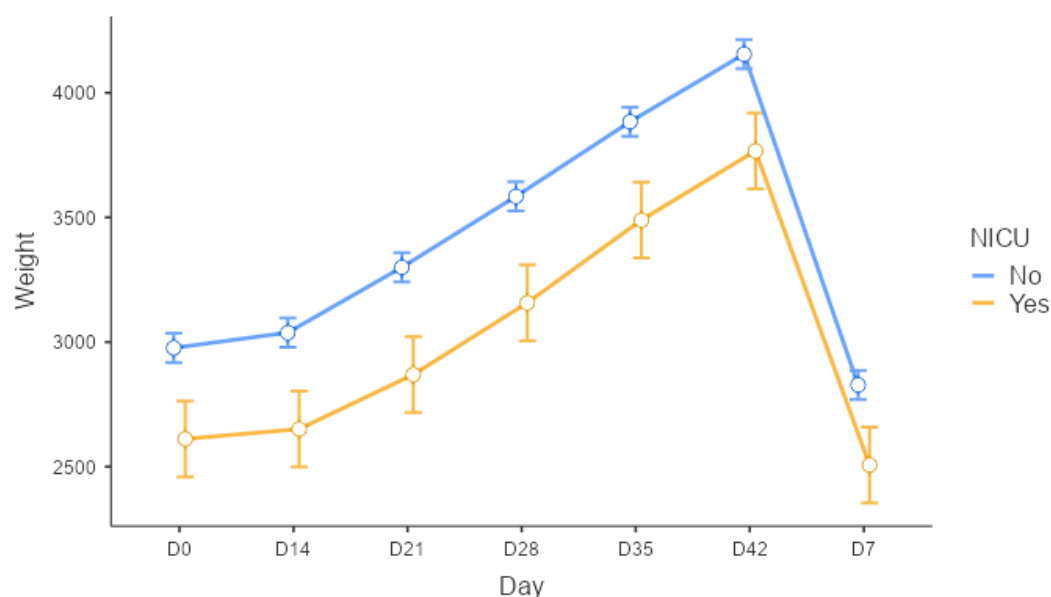


Figure 2. Longitudinal changes in infant weight stratified by NICU admission status.

DISCUSSION

The novel lactation support model that involved women as the main partners that was adopted in this research study depicts solid evidence that community-based, peer-led counselling can improve the practice of breastfeeding and the outcome of the newborns in a rural environment. The results indicate that educating rural young women as Lactation Support Agents (LSAs) enhances the better health of mothers and babies as well as the empowerment of women - two fundamental elements of sustainable rural development. The findings of past studies prove the significance of qualified counselling to enhance breastfeeding initiation and exclusivity. This was shown in a controlled trial carried out in northern India where dedicated lactation counsellors did not only increase the rate of breastfeeding initiation in the first hour but also enhanced the exclusive breastfeeding rates at six months old among them as opposed to the control group (Gupta et al., 2019). Also, in a comparative interventional study in Gujarat, structured prenatal counselling sessions had a positive effect on adherence to exclusive breastfeeding rather than early discontinuation (Koli et al., 2021). These results are echoed in our study in which the intervention of trained rural counsellors over a period had a positive effect on mothers through positive behavioural changes, such as the early initiation and continuation of breastfeeding. The reviews of the literature have underlined the effectiveness of community-based initiatives to enhance the percentage of exclusive breastfeeding in low- and middle-income nations (Mishra et al., 2021). Our findings build on this learning by demonstrating that if such interventions are facilitated by local women, they generate other social advantages--confidence, communication, and employability among counsellors. This is a two-fold influence on both health and gender empowerment goals, which conforms to the Empowerment Theory framework and the Health Belief Model. Literature in the south of India emphasizes cultural and social acceptability of peer-led models. As an example, peer counsellors in Karnataka cited such positive aspects as personal satisfaction, increased social status, and increased community involvement when incorporated into local health structures (Charantimath et al., 2023). These results are reflected on the current model where the trained counsellors are highly accepted and appreciated by the community and this guarantees sustainability of the program. Peer counselling has also been effective in international environments. Mexico City randomized controlled trial showed a considerable increase in the duration of exclusive breast feeding with home-based peer counselling (Morrow et al., 1999). Similarly, Dennis et al. (2002) also noted that peer counsellors had a positive impact on breastfeeding initiation and duration among low-income urban women. All these studies add value to the successful approach of peer-driven support, but our project injects a new dimension since the approach now includes the skill building and livelihood opportunities of women into the intervention process. Even though the results are encouraging, some limitations should be noted. The small sample size of the study and the use of simple descriptive analysis discourage the possibility of making powerful statistical conclusions. In addition, the briefness of the follow-up period taken (42 days) limits the evaluation of the long-term outcomes of breastfeeding. Further studies ought to incorporate bigger groups, inferential statistics and longitudinal observation to assess

long term effects. Policymaking wise, the findings will help to include women headed lactation counselling as part of the already existing programs of maternal and child health like the Integrated Child Development Services (ICDS) and the National Health Mission (NHM) where a similar report has been published (Sharma et al., 2020). This type of integration will be able to scale the program in a cost-effective manner and will also cover several Sustainable Development Goals, SDG 3 (Good Health and Well-being), SDG 4 (Quality Education), and SDG 5 (Gender Equality). In general, the research shows that empowering rural women to be turned into lactation counsellors can become a revolutionary approach to enhancing the nutrition of neonatal care and exclusive breastfeeding and developing women as leaders in community health. This is a culturally based holistic approach, which can be replicated in more districts and states to improve the maternal-child health outcomes on a broader scale.

CONCLUSION

The women-led lactation support model demonstrates the empowerment of rural women as trained lactation counsellors can significantly raise awareness among the rural mothers and improve breastfeeding practices thereby enhancing neonatal weight and health. This initiative fosters confidence among rural women contributing to both society and health. The findings affirm that localized community driven approaches are sustainable and capable of addressing the gaps in post-natal care. Further research focus on expanding the sample size, strengthen data analytics and scale this model to additional states for a long-term quality life of the rural society.

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