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Self Help Group Women Involved in Farming and Non-Farming Economic Activities in a Northern Hilly State of India: Nutritional Status of Women and Children

Vir SC[1]* and Koehler K[2]

[1]*Director, Public Health and Nutrition Centre, New Delhi, India*
[2]*Department of History and Sociology of Science, University of Pennsylvania, US*

***Corresponding author:** Vir SC, Director of Public Health and Nutrition Centre, New Delhi, India, Tel: +91-9873680247; **E-mail:** sheila.vir@gmail.com

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Abstract

Objectives: The overall aim of this study was to assess the nutritional situation of self-help group (SHG) women and children involved in microfinance livelihood activities, and to present evidence for interventions required to improve the nutritional status.

Methods: A total of 58 rural SHG women-29 from women farmer groups(WFG)and 29 not from women farmer groups (Non-WFG)-residing in the same region with children below 5 years participated in the study. The study assessed their nutritional status using anthropometric measures; coverage of maternal health services including the availability, consumption and knowledge of benefits of iron-folic acid supplements; and infant and child feeding practices.

Results: The findings revealed that 44.8% of women involved in WFG's had a low Body Mass Index, compared to 31.0 % of Non-WFG women. The percentage of women with low weight (less than 45 kg) was also much higher for women in farmer groups. Severe stunting and severe under weight (both 17.2% as well as severe wasting (6.9%), were also higher in children belonging to families of WFG's. Additionally, under nutrition in children was found to increase sharply between 6-24 months. Despite receiving high school education, all SHG women were found to have limited knowledge of maternal care and child feeding practices. The nutrition of WFG women was possibly further adversely affected due to high work load, time constraints for self- and childcare, and use of food produced solely for economic betterment.

Conclusion: SHG women involved in economic activities present an opportunity for reaching disadvantaged women through interventions for adoption of better infant, young child and maternal health care and feeding practices. Preventive measures need to specifically target SHG families with a pregnant woman or children under 24 months. Strategies for reducing physical drudgery and ensuring quality time is available for appropriate child and family feeding practices is essential, especially for women involved in homestead activities.

Keywords: Self Help Group women; Women farmers; BMI of women; Child undernutrition; Iron-folic acid supplements; Behavioral change communication; Infant and young child feeding practices; Care families with under twos

Introduction

Self Help Groups (SHG) are institutions of women with about 10-12 members, serving the purpose of providing members space for self-help, mutual support and collective action for social and economic development. An India-based study reports the benefits of SHG membership on improving savings, increasing family support, and enhancing the value and status of women within families and communities in India [1]. A rapid increase in microfinance and rural livelihood programs in South Asia, including India, has been launched with the key objective of empowering poor women [2]. Women's groups in India, including SHGs, are based on the philosophy that institutions of women are driven by women with the aim to "reduce poverty by enabling poor households to access gainful self- employment and skilled wage employment opportunities, resulting in appreciable improvement in their livelihoods on a sustainable basis, through building strong grassroots institutions of the poor" [3].Today, in India there are 2.4 million rural SHG women reaching 27 million households, focusing on elimination of poverty through micro financing activities [4].Through the SHG forum, economic activities related to homestead programs for food farming and allied activities pertaining to farming-including horticulture, aquaculture, poultry, livestock, and dairy programs actions-are gaining special attention. Such an empowering forum is expected to improve the nutrition of mothers, their children and their households [5]. However, evidence of the impact of microfinance programs on nutritional status is lacking, limited to implications for vitamin A status and anaemia [6,7] and the pathways remain unexplained [8,9]. Such evidence is essential for formulating strategies to reach economically disadvantaged women registered with SHG, and accelerating improvement in maternal, infant, and young child nutrition. Taking this into consideration, the nutritional status of SHG women and children involved in various homestead and non-farming economic activities was studied.

Methodology

A total fifty-eight SHG women were randomly selected from nine community panchayats of the Kangra District in Himachal Pradesh in North India. In the first phase of the recruitment process, 29 women were selected who fulfilled the following criteria: (a) enrolled in the special rural livelihood program designed to help marginalized female farmers by improving income and reducing poverty through support in agricultural and allied sector activities; (b) had at least one child ≤ 59 months (5 years) of age, (c) had a maximum monthly income of 25,000 Rupees (US $370), and (d) lived in a rural setting. The random selection was made using a list of farmers enrolled in women farmer group (WFG) activity. This

list was obtained from the records of a non-governmental organization-CORD-working in the area to improve the lives of marginalized female farmers through self-empowerment. The identified families were visited to ensure the inclusion criteria were followed. In the second selection phase, for the random selection of 29 women not enrolled in WFG (referred as Non-WFG), a snowball sampling method was used by asking WFG-enrolled interviewees about women who were not in WFG's but met the inclusion criteria (b), (c), and (d). Home visits were made to these selected families to verify they met these criteria. Eight of the 58 mothers selected in the study had two children under age 5. In such cases, only one child—the younger one—was selected for the group of index children. Prior to conducting study surveys, informed consent was verbally obtained from the selected 58 women after explaining the goals of the study. Participation was voluntary. The selected 58women-29WFG and 29 Non-WFG-were interviewed during the data collection period of June and July of 2015. Interviews were conducted using a questionnaire developed, field tested and subsequently refined. These questionnaires focused on basic demographic information, maternal health care, and infant and child feeding practices. The questionnaire contained six sections (see Appendix1): (1) General Information (name of mother, age, education, income and other family details including age of husband); (2) Obstetric History (number of children, age at first childbirth); (3) Health Information for Mother (antenatal care, number of times weighed during pregnancy, and consumption of iron-folic acid supplements); (4) Nutrition for Index Child (child's name, gender, date of birth, birth weight, and any breastfeeding and complementary feeding practices); (5) Health Services for Index Child; and (6) Anthropometric Measurements. Open-ended questions were used for obtaining data on maternal health care services, perceptions about benefits of iron-folic acid tablets, and reasons for poor adherence as well as obtaining information on knowledge and practices regarding infant and child feeding habits practiced by the mothers. The dates of birth and birth weights of children orally obtained from mothers were further verified from the records of local health centers.

Anthropometric measurements (height and weight) of both the surveyed mother and any children under 5 years of age were taken. Weight was measured in kilograms using an electronic scale accurate to the nearest 0.1 kg. Both mothers and children were weighed barefoot. For infants who could not yet stand, their mother held them and stood on the scale; then, the mother's weight alone was taken and the difference between these two figures was calculated to determine the infant's weight. Height was measured to the nearest 0.1 cm on both mothers and children able to stand against a wall with their feet flat on a level surface and heels, buttocks, shoulders, and the back of the head against the wall. A pencil mark was made on the wall at the height of the crown of the head, and a tape measure was used to measure the distance between the floor and the wall mark. For infants unable to stand, length was measured using an infantometer, which was accurate to the nearest 1mm, using a standard scale. The infantometer was placed on a hard, level surface, and length was measured with the infant lying flat on its back, with the head touching the 0.0 cm mark and facing straight up, and the feet positioned at a 90-degree angle relative to the surface. The distance between the crown of the head and the heels of the feet was measured. For mothers, Body Mass Index (BMI) was calculated (kg/m^2) to determine the prevalence of low BMI (<18.5). Mothers with height less than 145 cm and height less than 45 kg were considered "at risk" during pregnancy (2). For children under 5 years, anthropometric measures were used to determine the prevalence of stunting, wasting and underweight. This was obtained by calculating z-scores using the WHO Anthro Software, version 3.2.2 [10]. Children with stunting had a height-for-age z-score (HAZ) greater than -2SD below the WHO mean; those with wasting had a weight-for-age z-score (WAZ) greater than -2SD below the mean; and those underweight had a weight-for-height z-score (WHZ) greater than -2SD below the mean. Severe stunting, wasting and underweight applied to children with z-scores greater than -3SD below the mean. To compare health outcomes between WFG and Non-WFG women, all health data for mothers and children were divided into these two categories. Data analysis was undertaken by applying a two-sample t-test for to compare the differences between WFG and Non-WFG women. A $P < 0.05$ was considered statistically significant.

Results

The majority of women, either themselves or their mother-in-law in the case of joint family structures—had been members of the women farmer group for over 12 months. As presented in Table 1, the ages of the 58 WFG and Non-WFG women who participated ranged from 19 to 39 years with an average age of 28.5 years. In both the groups, over 96 % of mothers had completed high school education. Age difference between husband and wife was considered a proxy indicator of reflecting autonomy and decision-making capacity for women [11]. There was no apparent difference in education level between women and men, but the difference in spousal age was greater than 4 years in almost two thirds of women in the WFG group. For this and other background information, the differences between WFG and Non-WFG women were not found to be statistically significant (Table 1).No mother reported having a child before reaching the age of 18 years.

Women's nutrition and coverage of antenatal care health services

As presented in Table 2 below, whereas only10.3% of total women were shorter than 145 cm, half the women weighed below 45 kg. A low BMI (<18.5) was observed in 37.9 % of the women. The percentage of women with a low BMI was much greater in the WFG group (44.8 %) compared to the Non-WFG group (31.0 %).The differences noted between WFG and Non-WFG women were not statistically significant. The incidence of overweight women was less than 15 % in both groups. Table 3 indicates that all women attended antenatal care (ANC) services, with only 15.5 percent of women attending 1-3 times, and 84.5 percent attending the recommended minimum off our ANC visits. The percentage of mothers

Characteristic	WFG (n=29)		Non-WFG (n=29)		Total (N=58)	
	No.	%	No.	%	No.	%
Age (years)						
19-24	4	13.8	8	27.6	12	20.7
25-30	15	51.7	13	44.8	28	48.3
>30	10	34.5	8	27.6	18	31.0
Age difference between husband and wife (years)						
<4	10	34.5	13	44.8	23	39.7
≥ 4	19	65.5	16	55.2	35	60.3
Education						
8-9 standard	1	3.4	0	0.0	1	1.7
≥10 standard	28	96.6	29	100.0	57	98.3
Years of difference in education compared to spouse						
<1	17	58.6	20	69.0	37	63.8
≥ 1-3	10	34.5	8	27.6	18	31.0
>3-5	2	6.9	1	3.4	3	5.2
>5	0	0.0	0	0.0	0	0.0
Age at first childbirth (years)						
>18-25	20	69.0	19	65.5	39	67.2
>25	9	31.0	10	34.5	19	32.8

Table 1: Profile of women in WFG and Non-WFG groups

Measure	WFG (n=29)		Non-WFG (n=29)		Total (N=58)	
	No.	%	No.	%	No.	%
Height (cm)						
<145	2	6.9	4	13.8	6	10.3
≥ 145	27	93.1	25	86.2	52	89.7
Weight (kg)						
<45	16	55.2	13	44.8	29	50.0
≥ 45	13	44.8	16	55.2	29	50.0
BMI (kg/m²)						
<18.5	13	44.8	9	31.0	22	37.9
≥ 18.5-25	12	41.4	16	55.2	28	48.3
>25	4	13.8	4	13.8	8	13.8

Table 2: Height, weight and BMI of women in WFG and non-WFG groups

	WFG (n=29)		Non-WFG (n=29)		Total (N=58)	
Type of Health Service	**No.**	**%**	**No.**	**%**	**No.**	**%**
Antenatal Care (ANC) Visits						
1-3 visits	7	24.1	2	6.9	9	15.5
≥ 4 visits	22	75.9	27	93.1	49	84.5
# Times Weighed During Pregnancy by Health Staff						
Every ANC Visit	27	93.1	21	72.4	48	82.8
≥ 50% ANC Visits	1	3.4	2	6.9	3	5.2
<50% ANC Visits	1	3.4	6	20.7	7	12.1
#IFA Tablets Received						
<100	21	72.4	20	69.0	41	70.7
≥ 100	8	27.6	9	31.0	17	29.3
#IFA Tablets Consumed						
<100	26	89.7	24	82.8	50	86.2
≥ 100	3	10.3	5	17.2	8	13.8

Table 3: Health services sought by women during pregnancy

weighed during ANC visit was rather high, with over 80 percent in both groups having been weighed during pregnancy. The differences between the WFG and Non-WFG groups were statistically significant only for two measures: first, the number of women weighed during pregnancy at every ANC visit (27 WFG women vs. 21 Non-WFG women); and second, the number of women weighed at less than half of their ANC visits (1 WFG woman vs. 6 Non-WFG women), $p < 0.05$. Though around only a third of women in each of the two groups received the recommended supply of 100 iron-folic acid (IFA) tablets, the consumption percentage of 100 or more tablets was lower in the WFG group compared to the Non-WFG group. The difference between the two groups, however, was not statistically significant. Analysis of data regarding the perceived benefits of IFA tablets indicated that "increases blood" was considered the main benefit by the highest percentage of women in both groups. The response "increases blood" is a colloquial expression for improvement in the "quality of blood"-or hemoglobin levels-and is also commonly used by health workers to explain the benefits of IFA tablets. Positive impacts of IFA tablets or the benefits of taking the tablets on a child's health were stated by 20.7 % of WFG women and 27.6 % of Non-WFG women (Figures 1 and 2).

Nutritional status of children: Prevalence of stunting, underweight and wasting

Table 4 presents a profile of the index children. 44.8 % of the index children were male, and 55.2 % were female. Approximately one third of children in both groups were reported to be of low birth weight (<2.5 kg). Figure 3 presents the prevalence rate of stunting, underweight and wasting of children. Of the children studied, 24.1 % of children were stunted, while 13.8 % were severely stunted. The overall prevalence of underweight was 43.1 %, while severe underweight was 10.3 %. Nearly a quarter of children (24.1 %) were wasted, while 3.4 % were severely wasted. Comparing children in the WFG and non-WFG groups revealed a much higher prevalence rate of severe stunting, underweight and wasting in WFG children compared to Non-WFG children. The prevalence of wasting is almost threefold in WFG children (34.5 %) compared to Non-WFG children (13.9 %), while severe wasting was observed in the case of WFG children (6.9 %) but not in Non-WFG children. None of the differences in Figure 3, however, were statistically significant.

An upwards age-wise trend for the prevalence rate of stunting, underweight and wasting in children was noted (Table 5). A sharp increase in the prevalence rate of stunting and underweight was observed in children after 6 months. The prevalence rate of stunting and underweight increased at 6-24 months and over 24 months. The percentage of severely stunted and severely underweight children also was noted to increase with age. Severe wasting was noted to decrease with age.

Infant and child feeding practices

As indicated in Table 6, a third of women practiced pre-lacteal feeding. A higher percentage of non-WFG women reported practicing early initiation of breastfeeding and feeding of pre-lacteals. One in five women surveyed introduced water within two months of birth. Approximately half (48.3 %) of Non-WFG women began breastfeeding within an hour of birth, compared to only a quarter (24.1 %) of WFG women. The percentage of women reporting practicing exclusive breastfeeding was

Characteristic	WFG (n=29)		Non-WFG (n=29)		Total (N=58)	
	No.	%	No.	%	No.	%
Gender						
Male	17	58.6	9	31.0	26	44.8
Female	12	41.4	20	69.0	32	55.2
Age in Months						
<6	4	13.8	7	24.1	11	19.0
≥ 6-12	3	10.3	3	10.3	6	10.3
>12-24	8	27.6	12	41.4	20	34.5
>24-36	8	27.6	1	3.4	9	15.5
>36-59	6	20.7	6	20.7	12	20.7
Birth Order of Index Child						
One	7	24.1	17	58.6	24	41.4
Two	17	58.6	12	41.4	29	50.0
Three	5	17.2	0	0.0	5	8.6
Birthweight						
Normal	19	65.5	21	72.4	40	69.0
Low Birth Weight	9	31.0	8	27.6	17	29.3
No Record	1	3.4	0	0.0	1	1.7

Table 4: Profile of children of mothers of WFG and non-WFG groups

	Stunted (HAZ)				Underweight (WAZ)				Wasted (WHZ)			
	-2SD		-3SD (Severe)		-2SD		-3SD (Severe)		-2SD		-3SD (Severe)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<6 months (n=11)	1	9.1	0	0.0	3	27.3	0	0.0	1	9.1	1	9.1
6-24 months (n=26)	5	19.2	4	15.4	11	42.3	3	11.5	7	26.9	1	3.7
>24 months (n=21)	8	38.1	4	19.0	11	52.4	3	14.3	6	28.6	0	0.0

Table 5: Nutritional status of children by age group combined for WFG and Non-WFG

almost 50 % in each of the two groups. A fifth of children were reported to have been introduced to complementary feeding over 8 months of age. The situation was worse in the WFG group; almost a quarter of WFG women commenced complementary feeding after 8 months. The differences in the two groups were not statistically significant for any of the indicators (Table 6).

Characteristic	WFG (n=29)		Non-WFG (n=29)		Total (N=58)	
	No.	%	No.	%	No.	%
Initiated Breastfeeding Within						
≤ 1 hour	7	24.1	14	48.3	21	36.2
>1 hour	22	75.9	15	51.7	37	63.8
Pre-lacteal Feeding						
No	13	44.8	4	13.8	17	29.3
Yes	16	55.2	25	86.2	41	70.7
Time Water Introduced						
<2 months	7	24.1	4	13.8	11	19.0
≥ 2-4 months	3	10.3	4	13.8	7	12.1
>4-5 months	1	3.4	1	3.4	2	3.4
>5-6 months	2	6.9	1	3.4	3	5.2
>6 months	14	48.3	15	51.7	29	50.0
No water given yet	2*	6.9	4*	13.8	6	10.3
Time Semi-Solid Feed Introduced						
<6 months	1	3.4	1	3.4	2	3.4
≥ 6-8 months	17	58.6	16	55.2	33	56.9
>8 months	7	24.1	5	17.2	12	20.7
No semi-solid food given yet	4**	13.8	7**	24.1	11	19.0
Duration of Exclusive Breastfeeding (>6 months)* **						
<2 months	7	28.0	6	27.3	13	27.7
≥ 2-4 months	4	16.0	5	22.7	9	19.1
>4-5 months	1	4.0	1	4.5	2	4.3
>5-6 months	12	48.0	10	45.5	22	46.8
>6 months	1	4.0	0	0.0	1	2.1
Response to Child's Illness						
Continues Breastfeeding	8	27.6	16	55.2	24	41.4
Reduces/Stops Food	7	24.1	6	20.7	13	22.4
Continues Semi-Solid Feed	8	27.6	6	20.7	14	24.1
Any other (e.g. child not ill yet)	6	20.7	1	3.4	7	12.1

Table 6: Infant and Child feeding practicesof children of WFG and Non-WFG groups

*All 6 of these children are <6 months, and given water in addition to breast milk (thus, only 5 out of the 11 total children <6 months were being exclusively breastfed)

**All 11 of these children are <6 months

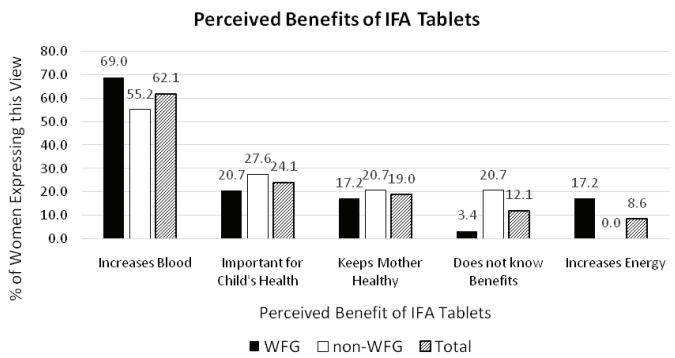

Figure 1: Perceived benefits of IFA tablets by mothers in WFG and Non-WFG groups

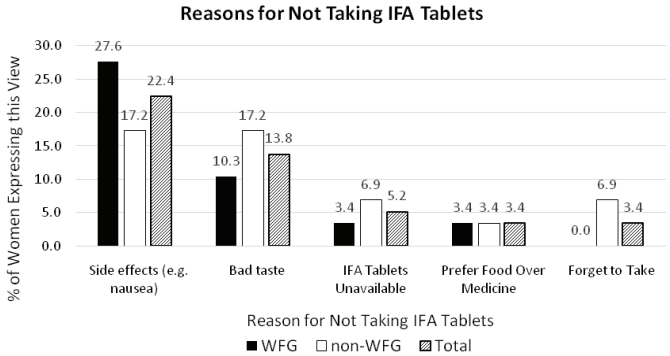

Figure 2: Reasons reported for not taking recommended dosage of IFA tablets Figure 2 indicates that over a quarter of the women interviewed in the WFG group reported that side effects were the cause for discontinuation of IFA tablets, as compared to less than a fifth of women in the Non-WFG group. Interestingly, bad taste was the second highest cause of low adherence. Little or irregular consumption of IFA tablets was also attributed to forgetting to consume the IFA supplement daily.

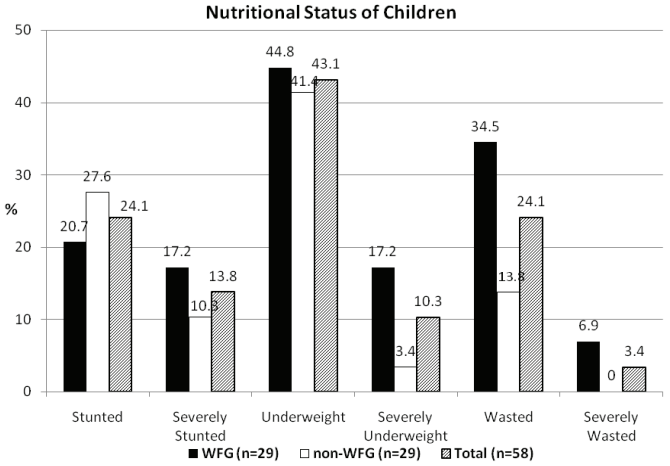

Figure 3: Nutritional status of children <5 years of women registered with SHG.

Discussion

In the current study, the percentage of children with severe stunting, underweight, and wasting was found to be much higher in families of farmer group women involved in homestead-related economic activities, as compared to non-homestead self-help group women. The differences in the two groups studied were apparent, but were non-significant. This could be due to the sample size in the study being on the lower side, which resulted in low power of the statistical tests performed. This was a constraint of the study, which was performed in a hilly region of North India with a sparse population and a small number of families with children under the age of 2 years. In their role as care givers, women directly influence their children's nutrition through childcare practices, as well as indirectly through their own nutritional status [10,11]. Childcare practices are influenced to a great extent by maternal care resources, which are not limited to mothers' nutrition and physical well-being, but to factors which influence mothers' empowerment such as education and knowledge, decision making power and control over household resources, employment, and time availability [12,13]. Analysis of demographic surveys across three South Asian countries reveals that the highest risk factors influencing the stunting rate in children across these countries pertain primarily to women's healthcare, education, maternal height, and

domestic violence, alongside low standards of living, wealth quintiles and access to water [14-16]. The present findings reveal that the high education level of SHG women, possibly played a role reducing the social problem of early conception as well as improving coverage of maternal health services. However, it did not have the desired impact on maternal nutritional care or adoption of appropriate infant and child feeding practices. Rather counter intuitively, the children's nutritional situation was observed to be much worse in women linked to farming and allied activities. Women's work in agriculture may indeed increase the resources available to the family, but on the other hand, could negatively impact allocation of time or energy for adequate childcare and pose a salient barrier to child feeding practices, even though mothers may possess the knowledge of appropriate feeding practices [17]. It is evident from the findings that SHG women, irrespective of the type of economic activities undertaken, must be reached and encouraged to adopt adequate infant and child feeding habits and maternal diet practices, including promotion of the benefits of regular consumption of iron-folic acid supplements, through an effective social behavior communication strategy. Agricultural interventions, accompanied by stronger nutritional and health education, are likely to positively impact nutritional outcomes [9]. Focusing on behaviour change communication strategies has been proposed in recent recommendation guidelines for the National Rural Livelihood Program for women in India [4].In the last decade, Nepal has also documented the impacts of combining home gardening projects with intensive IEC activities on higher consumption of special foods such as eggs, meat, milk, nuts, and dried fruits during pregnancy [18]. In a HKI-HFP project of Bangladesh and Nepal, agriculture and livestock support were reported to result in an increase in consumption of eggs and pulses as well as a significant decline in anemia [6,7]. Involvement of men in such a communication strategy cannot be ignored.Interestingly, in the current study, the prevalence of an age gap of over four years between spouses (with the men being older) was much higher in WFG women compared to Non-WFG women, and possibly adversely affected maternal and childcare practices. A possible negative impact of spousal age difference on decision-making power of women with reference to childcare practices has been reported [11]. Furthermore, a higher percentage of women involved in homestead economic activities were observed to have a low bodyweight as well as low BMI. Physically taxing economically-based farming practices in hilly regions, combined with poor eating practices of women-even despite economic gains-possibly contributed to negative energy balance and lower body weight in women farmers. An adverse impact of workload or time constraints on women's and children's nutritional status has been reported [2,19,20]. A recent study from Nepal that used the Women's Empowerment in Agriculture Index (WEAI) reports that women's autonomy in production and women's work in agriculture influence diet diversity for children under 2 years and reduce the incidence of stunting in children, but do not necessarily impact women's nutritional status [20].Evidence of agricultural interventions on women's empowerment, time for self and child care and workload is mixed. The current findings confirm that elimination of poverty through women's groups such as microcredit groups or SHGs is not in itself adequate to reduce the rate of under nutrition. However, the scope of using SHG forums to go beyond the elimination of poverty and food production to interventions that encourage adoption of appropriate maternal care, infant and child feeding, and hygiene practices by women with limited resources is evident. Women's groups involved in economic activities need to be systematically reached with energy conservation strategies and effective communication interventions, irrespective of the type of income-enhancement activity. The observation of the current study concurs with earlier global findings that engaging children under 2 years is a crucial opportunity to address the linear growth retardation in early childhood in low and middle income countries [21, 22]. Care of pregnant women and children 0–24 months requires special attention for preventing under nutrition. The SHG platform, reaching the most disadvantaged rural women, is a suitable entry-point for engaging women for the timely prevention of under nutrition in the first 1,000 days of life. Mapping families of SHG women that include pregnant women or children under 2 years, as well as newlyweds, is imperative to direct interventions which couple nutrition-sensitive actions to empower women and enhance the economic status with essential, direct nutritional interventions that improve maternal and child feeding and healthcare services [2, 4].

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Appendix 1: Details of Questionnaire Used in Study

General Information
Date of Survey:
Name a. Wife b. Husband
Date of Birth a. Wife b. Husband
Education/schooling a. Wife b. Husband
Panchayat
Ward #
Working status 1) Working 2) Non-working If yes, type of work If no, do you work on your farm or any other farm?
Day rest 1) Nil 2) 1 hr 3) 2 hrs 4) >2 hrs
Type of family 1) Joint 2) Nuclear 3) Extended
Family size
Total family income per month 1) <1,000 2) 1,000-<2,000 3) 2,000-<3,000 4) 3,000-<5,000 5) ≥ 5,000
Total expenditure on food per month 1) 1,000-<2,000 2) 2,000-<3,000 3) ≥ 3,000
Are you a member of a Mahila Mandal (MM) group? 1) Yes 2) No If yes, is it through CORD? 1) Yes 2) No
How long have you been a member?
Are you a member of a Self-Help Group (SHG)? 1) Yes 2) No If yes, is it through CORD? 1) Yes 2) No How long have you been a member? How much additional income have you generated per month?

Are you a member of a Women Farmer Group (WFG)? 1) Yes 2) No If yes, is it through CORD? 1) Yes 2) No How long have you been a member?
Obstetric History
No. of living children 1) 0 2) 1 3) 2 4) 3 or more What was your age at first childbirth? What was your age at the time of birth of index child?
Health Information for Mother
Number of antenatal check-up visits during pregnancy (4 ANC visits recommended) 0) None 1) One 2) Two 3) Three 4) Four 5) > Four
Any complications during pregnancy? 0) None 1) Hypertension 2) Low B.P 3) Anemia 4) Diarrhea 5) Weight loss 6) Any other (Pl specify)
Were you weighed during pregnancy? 1) Yes 2) No If yes, how many times?
Any record of total weight gain during pregnancy? 1) Yes 2) No If yes, details
What is your view regarding weight that must be minimum before the onset of pregnancy?
Do you know what is the recommended minimum weight gain during pregnancy?
Did you get Tetanus (TT) vaccination/injection? 1) Yes 2) No If yes, How many?
Did you receive iron-folic acid (IFA) tablets during pregnancy? 1) Yes 2) No <60, >60-<100, at least 100, Over 100 If yes, how many tablets did you consume? If yes, why do you think IFA is important during pregnancy?

If you did not consume the supplied IFA, what is the reason? (Not required, you forgot to consume daily, bad taste, side effects, do not think important, not aware why it should be consumed, any other?)
When you were pregnant, did you receive any medicines/tables to prevent worms (Keeda)? 1) Yes 2) No If yes, specify (how many you received, how many consumed):
Nutrition for Index Child
Child name
Child sex
DOB:
Age: Birth weight (from records): *Note: LBW <2500g, or < 2.5kg VLBW < 1500g, or <1.5kg
When did you initiate breastfeeding after birth? 1) within 1 hr 2) 1<4hrs 3) 4<6hrs 4) 6-12hrs 5) 12-24hrs 6) 24-48hrs 7) 48-72hrs 8) 3-6 days
What did you give immediately after birth? 1) Mothers milk 2) powder milk 3) Animal milk 4) Honey 5) Ghutti 6) Jaggery water 7) Others
Did you give colostrum (first yellow milk) to the child? (Keerd) 1)Yes 2) No
Did you give any pre-lacteal feed to the child? 1)Yes 2)No If yes, please specify How long did you feed your child only breast milk, i.e., no water or pre-lacteals or any other juice or food?
Did you give animal milk along with breast milk? 1) Yes 2) No If yes, when? And amount given in a day?
Did you give tinned or formula milk along with breast milk? 1) Yes 2) No If yes, when? And amount given in a day?
When did you start giving water? For 6+ months:
When did you start introducing semi-solid food, other than milk, to the child (complementary feeding)? 1) before 6 months 2) at 6 months 3) after 6 months
Types of foods given at this time?
Consistency of food 1) solid 2) semi-solid 3) liquid 4) Mixed feeding
Did you continue breastfeeding along with this complementary feeding? 1) Yes 2) No If yes, how long did you continue with breastfeeding?
Any vegetables, other than potatoes, given to child? 1) Yes 2) No If yes, how often?
Is the child being given any fish or eggs? 1) Yes 2) No If yes, how often?
Fruits given in a day? How often?

Do you put any additional fat/oil/ghee/butter in the child's semi solid feed? 1) Yes 2) No If yes, details of fat item given
Health Services for Index Child
Has the child received immunization(s) or vaccinations recommended by GoI? (see card and record details of DPT 1,2 and 3/measles first and second?)
Has the child received Vitamin A dosage? 1) Yes 2) No If yes, how many doses of VAS received?
Did the child ever get any medicines/tablets for preventing worms (Keeda)? 1) Yes 2) No If yes, when was the last dose given?
Has the child suffered from illness (viral, diarrhea, any other) in the last 15 days?
During illness, what is the feeding pattern 1) Reduce food fed 2) increase food fed 3) Give no semi-solid food 4) continue breastfeeding 5) Give ORS with food 6) Give ORS and No food 7) any other
Anthropometric Details
Mother a. Weight (kg) b. Height (cm)
Child a. Weight (kg) b. Height (cm)