

Ref #: 531



## *Reducing Maternal Anemia through Community Participation: Bangalore, India*

Primary Investigator:

**Collaborating Agency:**

Project Period:

*Background:*

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Anemia prevalence among pregnant women in India is estimated at an alarming 88% (WHO, 1992). In 1994 the Government of India reported that 190/0 of maternal deaths in India were due to anemia. Anemia is also a contributory factor to the other major reported causes of maternal deaths such as hemorrhage (24%) and sepsis (8%) (Government of India, 1994).

Dietary inadequacy, especially of iron and folic acid, is a major detemrinant of anemia. According to the Indian Council of Medical Research, a normal fudim vegetarian diet contains 18-22 mg of iron, which represents only 58% of the recommended 40-60 ~ of iron during pregnancy (1989). This is based on 100/0 absotption rates in order to provide the requisite 4-6 mg. Although absorption of iron is increased in pregnancy, supplements remain mandatory during this vulnerable period.

The impact of the Government' s Reproductive and Child Health Program, which distributes iron tablets to pregnant women at no charge, has been limited due to poor supply and distribution of supplements. The latter is believed to be due to a lack of effective contact between most pregnant women and health service personnel (Shah U., 1984). However, the lack of awareness on the part of the community and the lack of motivation among the government peripheral health worker may also playa major role.

A strategy shown to successfully counter the problems of coverage and compliance in teImS of iron supplementation in pregnancy has been the use of health workers from within the community for screening, treatment of anexiria, and provision of nutritional advice. Several studies from other parts of the developing world have shown that acceptable compliance rates have been achieved when traditional birth attendants and other members of the community who share the same cultural beliefs as the recipients are enlisted as iron suppliers (Schultink and Dillon, 1998). High rates of iron tablet consumption have also been linked to the way these supplements were distributed - the higher rates being among women who received iron from traditional birth attendants (TBAs) during house visits (Utomo et al, 1993). These caregivers also provide support to the mother during the first few weeks of supplementation and advice on when best to take the tablets to minimizL:!, side effects. Therefore, the researchers hypothesized that a

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In the rural intervention areas with a Crude Birth Rate of 27 per 1000, the total number of pregnant women that needed to be sampled in each group was 200. Given that the smdy was only 3 months, all women in the area at the time were included in the baseline survey in the intervention area. The total number of pregnant women in a population of 64,900 with a CBR of 27 per 1000..is  $27 \times 64.9 = 1752$  per year. Similarly a comparable sample size was available in the control area which had a total population of 49,200 and comparable Crude Birth Rates.

In the urban slums, a minimum of 100 pregnantwomen would be available at baseline in each of the groups for the urban areas (pop = 11,500 and 15,000 in intervention and conuol respectively), based on a Crude Birth Rate of 30 per 1000.

A baseline survey was conducted using a structmed interview instrument, followed by hemoglobin estimation using the micro-hematocrit method (capillary blood was collected using finger prick method into heparinised glass capilimy tubes which were subsequently centrifuged. The hematocrit reading was obtained by placing the tube against a standardized scale). This was CaIried out in both intervention areas (n - 541) and control area (n=511). The qualitative research phase of the project was administered in the intervention area only.

*Study population*

The study was perfonned in the areas served by two Government Primary Health Centers (PHCs), Sarjapur and Anugondanahalli. The areas have a combined population of 75,596, are geographically contiguous, and are unifonn in terms of socio-demographic characteristics. Agriculture is the main source of income and most of the population work as daily laborers earning 50 to 90 Rupees (men) and 40 Rupees (women) per day. (1 Rupee = 2.5 US cents)

*B; Data Collection*

*Baseline quantitative survey*

Following the guidelines for sample size as mentioned above, an attempt was made to identify the total number of pregnant women in all the villages under the 2 Primary Health Center areas of SaIjapura and Anugondanahalli. This was done mainly through antenatal registers maintained at the Govt health centres and Govt health functionaries (Junior Health Assistant - Female) and with the help of traditional birth attendants (TBAs), local women's groups and community leaders.

The women were visited in their homes where the interview and hemoglobin tests were carried out.

*Qualitative research*

Social mapping was used in the first phase of the qualitative research to identify panchayat leaders and TBAs. Community volunteers and pregnant women within the community who could be potential candidates for key informant interviews were identified. Other research methods used were the Venn Diagram, free listing of ailments during pregnancy, severity ranking, preference ranking of service provider, case studies, and direct observation.

surrotmding private practitioners to ensure that when women do come for complaints of *susthu*, anemia diagnosis and treatment are implemented. An orientation to the existing government anemia control program is necessary for private practitioners to ens\n'e con'ect dosage and duration of supplementation.

Additional results demonstrated in~ counseling by health workers resulting in women' 5 lack of understanding about the lationale for consuming iron supplements during pregnancy. Women expected to experience a cessation of the symptoms of anemia immediately, and were disappointed that they continued to have them after a short period of tablet consumption. And the experience of their peers was highly influential in women' 5 decision-making regarding conswnption offi'compliance with iron folate tablets: "The Health Center gave me red tablets to eat twice daily. But my sister told me she had bad stomach ache after taking the tablets. After hearing this, I did not even open my packet. "

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*Intervention Objectives:*

Select and train Community Health Volunteers (CHV s) with the assistance of the community. This would be achieved by motivating women's groups to select village level volunteers such as TBAs and other village level functionaries. Establish an efficient distribution network through the CHV s. Women's groups will obtain supplies of iron supplements from the Government Primary Health Center and ~se the distribution of supplements by the volunteers in cooperation with the Junior Health Assistant (Government village-level functionary).

ASSist the CHV in organi7:ing IEC programs/campaigns to:

Increase awareness of anemia ~d importance of iron supplementation among women;

Improve compliance behavior with iron supplements;

Increase dietary intake of iron-rich and vitamin C-rich foods; and

Promote birth spacing.

Assess the impact of the project and transfer responsibility of the program to local groups in order to foster community ownership and accountability.

**Intervention Strategies:**

*Identification and Training of Community Health Volunteers*

Community Health Volunteers (CHVs) were identified with special predetermined criteria (e.g. willingness and enthusiasm, being a mother, and having family approval) and with the help of women in the community, village leaders, and government functionaries. Traditional Birth Attendants were given priority and selected in many villages as they already enjoyed an excellent relationship with women in the community and were trusted caregivers during pregnancy.

Seven full-day training programs were held to equip the Community Health Volunteers (94 rural; 51 urban) the skills required to communicate with pregnant women and their families regarding iron supplementation and to motivate women towards better compliance. .

As can be observed frOm the above table very few women received iron from the . government health worker. This was mainly due to an acute shortage of iron throughout the state ofKamataka during this time. As the project design entailed iron tablets being taken from the GoVt. Health Worker by the project community health volUnteer (CHV), this part of the intervention suffered greatly because of the shortage. However, fearing a loss of interest among the CHV s, the project independently mobilized iron directly from the drug companies to enable the newly - established process of distribution to continue. This accounts for the 15.4% of women who continued to receive iron through the project intervention.

The other vital intervention of the project was creating a demand for iron through aggressive IEC strategies. This has resulted in the increased amount of iron being requested by pre~t women from health care providers in both the private and government sectors. Among the government institutions only a few of the larger Taluk and District Hospitals continued to have some meager supplies of iron. Therefore figures related to this reflect pregnant women who have received antenatal care from these specific centres.

VIII.

**Key Conclusions:**

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## IX

Anemia afflicts up to 600/0 of pregnant women in India.

The Government has attempted to address this issue through the National Anemia Prophylaxis program, which has been in effect since 1971.

Despite this coverage and compliance have remained issues of concern.

This project demonstrated the effectiveness of utilizing community women as "Volunteers" who would participate in the distribution of iron thereby improving coverage.

Health education and promotion of iron consumption through innovative IEC strategies was shown to generate demand for iron as well as improve compliance in terms of regular consumption.

Supply and distribution system problems continue to play a major role in poor results of iron supplementation programs in India.

### *Publications:*

*The Prevalence of Anemia in Women: A tabulation of available information, WHO, 1992.*

National Child Survival and Safe Motherhood Programme, MCH division, Dept. of Family

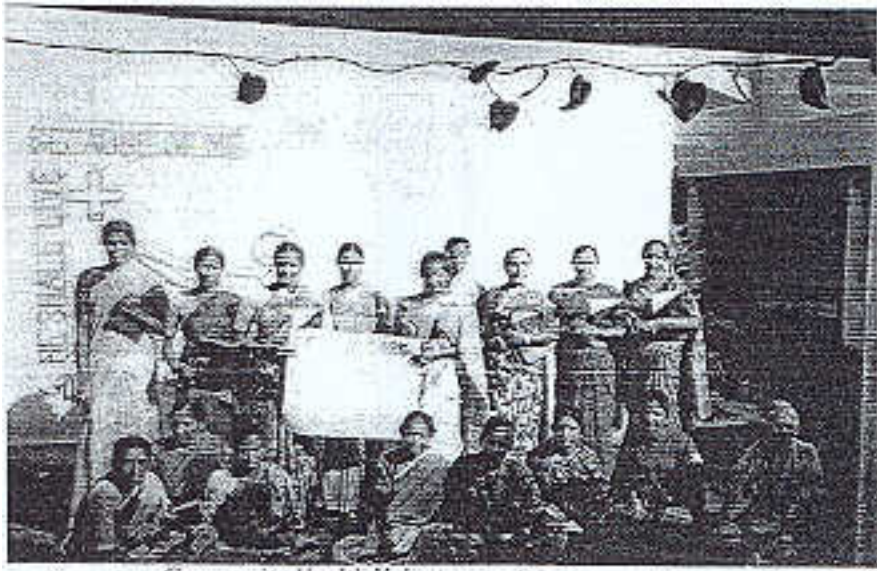
*Reducing Maternal Anemia through Community Participation.* Dept. of Community Health, St. John's Medical College, Bangalore, India 1998.

Shah, U. et al *Using Community Health Workers to Screen for Anemia.* World Health Forum, 1984.. 5: 35-36.

Utomo Budi, Pandu Riono, Teguh Budiono, Endang L.Achadi, Gouranga Dasvamla, Mary J. Hansell, Nancy L. Sloan, James Phillips, David Leon, and Carolyn Hessler-



*Skit demonstrating advice on anemia presented to a pregnant*



*Community Health Volunteer training group*