ABSTRACT

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It is well known that nutrition related components of antenatal care services such as monitoring of weight gain during pregnancy, iron-folic acid supplementation, and nutrition education and counseling play a major role in determining the outcome of pregnancy. However, there are gaps in knowledge regarding the quality of implementation of these services, especially in the context of an urban health system. The Health Systems Research Methodology has not been adequately used to understand and improve nutrition services as a part of the antenatal care program. This research was therefore taken up with the following major objective:

To study the urban health system of the Vadodara Municipal Corporation with respect to the quality of implementation of nutrition services for pregnant women in the antenatal care program, and to facilitate qualitative improvements in these services using the Health Systems Research Methodology.

The present study was carried out in Vadodara, Gujarat over a period of two years (1997-1998) in two purposively selected Health Posts of the Vadodara Municipal Corporation. The health functionaries of these two Health Posts gave the health service providers' perspective, and 153 pregnant women enrolled from eight representative slums under these two Health Posts provided the beneficiary perspective.

The study broadly consisted of three phases. In **Phase A**, a situational analysis was carried out to assess the implementation of nutrition related antenatal care services in the Corporation's health system using several qualitative, participatory and quantitative research methods.

The situational analysis highlighted several drawbacks in the implementation of antenatal care services in the health system, which included : lack of clarity regarding job functions among the health functionaries, low priority given to antenatal care, especially to nutrition services, unplanned distribution and absence of

monitoring of compliance with iron-folic acid supplements, and poor supervision and lack of IEC material on maternal nutrition and anemia.

Perceptions of the functionaries indicated low awareness regarding the problems of undernutrition and anemia during pregnancy. Marked differences were also observed among the perceptions of the functionaries and beneficiaries, especially regarding procurement and consumption of iron-folic acid supplements.

The assessment of the nutritional status of the 153 pregnant women revealed low hemoglobin levels (mean : 9.07 g/dl), and a high prevalence of anemia (88%). One third (39%) women had BMI values less than 18.5, indicating chronic energy deficiency.

A comparative analysis of the implementation of antenatal care services in a purposively selected rural Primary Health Center revealed that the nutrition related antenatal care services were more systematically implemented in the rural health system than the urban system.

In **Phase B**, based on the lacunae observed, intervention strategies were implemented to facilitate the functionaries to deliver better nutrition services to pregnant women. These strategies included modifying the job functions of the health functionaries as regards antenatal care (especially nutrition services), training to strengthen capacity of health functionaries to execute these job functions, reduction in the workload of supervisors to enable better supervision, simple modification of the Monitoring Information System, i.e., of the antenatal care and home visits registers to include data on compliance with iron-folic acid supplements, and production of IEC material to be used by the functionaries to counsel pregnant women.

In **Phase C**, firstly, a process evaluation was carried out to assess the response of the health system to these intervention strategies and secondly, nutritional status of a sub-sample of 50 pregnant women was monitored till delivery. Methods used were direct observation of functionaries and beneficiaries through repeated follow up visits to the two Health Posts and the pregnant women's houses; exit interviews with women

visiting the weekly MCH clinics, measurement of the women's hemoglobin levels, weight gain and recording of birth weights of their newborns.

It was observed that the functionaries spent less than 50% of their time on productive, job related tasks. One reason for this could be the several vertical campaigns which took up around six months in the year under observation. Secondly, register work took up about one-third of their time in the office to the neglect of direct service delivery. The weekly MCH clinics were identified as child immunization centers by women rather than as centers providing antenatal care services. Subsequent to the intervention, the functionaries distributed iron-folic acid supplements but did not record compliance. The IEC material made available to them was seldom used due to time constraints. Despite the changes in the supervisors' workload, the quality of supervision for nutrition services did not improve at the grassroots level, but it did improve at the level of the higher authority. In view of the lack of support of the urban health system to improve the implementation of the nutrition related antenatal care services and frequent vertical programs, it was not surprising that out of the 50 pregnant women who were followed up till delivery, none had completed the full course of 100 iron-folic acid tablets. Also, a high proportion (20%) of the babies born to these women had birth weights less than 2.5 kg.

It is recommended that the Health Systems Research Methodology should be applied to understand and improve other nutrition services such as control of protein energy malnutrition and micronutrient deficiencies and that more attention should be given to urban health systems in future intervention research. Further, intervention research should be linked to advocacy, to facilitate acceptance and sustainability of innovations in nutrition services in mainstream health care.