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Original Article

Community Section

Unravelling the Gaps in Anaemia Control among Pregnant Women- A Qualitative Study from an Urban Setting

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ABSTRACT

Introduction: Nutritional anaemia is one of the biggest public health problems of our country. Inspite of anaemia control being one of the oldest National Health Programmes, the prevalence of anaemia among the pregnant women has practically remained the same since the last five decades. This implies that something critical is being missed in the entire chain of operations of the programme.

Aim: To explore the missing links and real factors impacting the success of anaemia control among pregnant women.

Materials and Methods: A qualitative study was conducted among currently pregnant women attending the antenatal clinic of a Tertiary Care Hospital in urban Chennai, India from June 2022 to August 2022. In-depth interviews were conducted with the pregnant women to discover the pregnant mothers' perspectives and challenges in compliance with the anaemia control initiatives.

Results: A total of 25 pregnant mothers were interviewed in the study. The mean age was 28.3±4.07 years. Eight mothers were primiparous, and 17 multiparous. 12 mothers were anaemic as per their last Haemoglobin (Hb) estimation. Though there was reasonably good knowledge among the pregnant mothers regarding anaemia and its treatment, there was a significant gap in compliance to the anaemia prophylaxis/treatment. Several common critical issues surfaced in the study which was related to the social norms, family dynamics, health system and support related to management of side-effects.

Conclusion: It is essential to address the operational gaps and the unique issues of treatment compliance in our society. Behavioural change communication needs to be specific and targeted, mothers need a better health and social support system to manage the side-effects of Iron-Folic Acid (IFA) and the healthcare system needs to involve other key decision makers in the household like husbands, mother in laws to provide a supportive environment.

Keywords: Behavioural change communication, Compliance, Iron and folic acid tablets, Pregnancy

INTRODUCTION

Anaemia is the leading cause of morbidity and mortality among women during pregnancy and childbirth. According to the World Health Organisation (WHO), in 2019, the prevalence of anaemia in women aged 15-49 years globally was 29.9% with higher prevalence among pregnant women (36.5%) than non pregnant women (29.6%) [1,2]. In India, 57% of women in the reproductive age group were found to be anaemic. Tamil Nadu reported 48.3% of pregnant women as anaemic as per the National Family Health Survey-5 (NFHS-5) [3]. During pregnancy, anaemia is associated with adverse maternal and birth outcomes such as preterm delivery, low-birth-weight infants, decreased iron stores for the baby, permanent reductions in children's cognitive capacity and maternal mortality having an inter-generational effect through a life cycle approach [4-6].

The National Nutritional Anaemia Prophylaxis Programme was launched in India in 1970 to prevent anaemia in mothers and children [7]. Weekly Iron and Folic Acid Supplementation (WIFS) was started in 2012 to improve the anaemia status in adolescent girls and boys [8]. In 2013, National Iron Plus Initiative (NIPI), was launched as a comprehensive strategy to combat the public health challenge of iron deficiency anaemia prevalent across the life cycle [9]. Recently, the Intensified NIPI "Anaemia Mukt Bharat" was rolled out with a 6×6×6 strategy [10]. Despite having a national programme for anaemia for more than five decades no marked improvement had been noticed in the magnitude of anaemia. Anaemia prevalence has increased from 53 % (NFHS 4) to 57 % (NFHS 5) among women [3].

In India, during the year 2019-21, 87.6% women received IFA tablets but only 26% of them consumed IFA tablets for more than 180 days during pregnancy indicating that the root cause of the problem lies among the consumers [3]. Side-effects, bad smell and taste, forgetfulness, cost factor and limited information regarding IFA from frontline health workers etc are the factors reported for noncompliance [11-14]. Therefore, a qualitative study was planned to explore the operational gaps in anaemia control among pregnant women.

MATERIALS AND METHODS

A qualitative study was conducted to assess the operational gaps in anaemia control among women attending the antenatal clinic of a Teritary Care Hospital in urban Chennai, India. The duration of the study was three months (June 2022-August 2022). The study was approved by the Institutional Ethics Committee (IEC) of Sree Balaji Medical College and Hospital (002/SBMC/IHEC/2022-46).

Inclusion criteria: Pregnant women attending the antenatal clinic of Sree Balaji Medical College and Hospital were included in the study. All pregnant women irrespective of parity and any trimester were included in the study.

Exclusion criteria: The pregnant women who did not give consent to participate in the study were excluded.

Purposive sampling with maximal variation sampling design was used to select the samples for the study. Pregnant women with different parity, different age groups, socio-economic status and education background were selected to discover the central themes and issues across all these varied demographic groups.

Study Procedure

In-depth interview methods were used to collect the information from the pregnant mothers. The main goal of this method was to collect information-rich data which needs mental sharpness, sensitivity and practice of the researcher [15]. An interview guide was developed which consisted of a list of broad topics to help the interviewer in the

interview process. The interview took place in the counselling room in the obstetrics OPD of a tertiary hospital. Two interviewers were trained and conducted the interview process. Each interview was conducted by the same team of interviewers. The mothers and their attenders were present during the interviews, care takers included husband or another family member. Informed consent was taken from each mother, and they were given the freedom to abstain from answering any question if they felt uncomfortable answering so. All the interviews were conducted in the native language Tamil.

The interview guide included socio demographic details of the mother, present and past obstetric history, treatment seeking behaviour for anaemia, history of anaemia treatment and its management. Knowledge of the mother related to anaemia, risk factors, risks of anaemia to her obstetric outcomes, relation between diet and anaemia, foods rich in iron and folic acid were also collected. Data on perception of anaemia as a serious disease, role of IFA as treatment efficacy, factors affecting treatment seeking behaviour and treatment compliance, family support were obtained.

All the interviews were audio recorded. The interviews lasted from a range of 40-75 minutes. Mothers were encouraged to explain in their own language and express freely their perspectives and experiences. Questions were posed in a neutral manner to all the participants and their responses were heard attentively and participants were not shown approval or disapproval of what they said.

STATISTICAL ANALYSIS

Descriptive statistics were computed for the background study variables. All the interviews were transcribed verbatim and translated into English. The keywords, phrases were documented. The transcribed interview was then coded. The transcribed data were analysed by using seven stage Colazzi Thematic Analysis [Table/Fig-1]. The various codes were categorised into sub themes and themes were generated.

Theme	Sub-theme	Codes
Patient-related factors	Knowledge regarding anaemia	Knowledge regarding the cause of anaemia
	Irregularity in taking IFA tablets	Failure to take medications on time
	Negligence in taking IFA	Taking other forms of medicines for treatment
Health system-related factors	Place of procurement of IFA	Spending money on procuring IFA in few private sectors
	Motivation from healthcare workers	Awareness given by healthcare workers to pregnant women on anaemia and IFA
	Doctor's role in diet management	Advice on iron rich foods and compliance to IFA
Treatment-related factors	Side-effects of IFA	Experiencing side-effects hinders the IFA intake
	Cost of IFA	Irregularity in consumption of IFA due to money spent per month on IFA
Family/Peer support	Spouse and relatives' involvement	Decision making and encouragement in diet and compliance of IFA among pregnant women

[Table/Fig-1]: Themes with related categories and codes. (Seven Stage Colazzi process).

RESULTS

A total of 25 pregnant mothers were interviewed in the study. The mean age was 28.3±4.07 years. The age ranged from 19 years to 38 years. Six mothers were currently employed, while 19 were housewives. The education status was varied, ranging from primary schooling to post graduates. Eight mothers were primiparous, and 17 multiparous. 12 mothers were anaemic as per their last Hb estimation, out of which six were mildly anaemic and six were moderately anaemic. Most of the mothers (22) were getting free IFA tablets from Govt or private hospitals, only three of them were buying the IFA tablets from the pharmacy [Table/Fig-2].

Variable	Frequency N=25
Age (Years) (Mean age-28.3 years)	
19-23	1 (4%)
24-28	13 (52%)
29-33	9 (36%)
34-38	2 (8%)
Occupation	
Employed	6 (24%)
Housewife	19 (76%)
Education	
Primary	2 (8%)
High school	4 (16%)
Higher secondary	7 (28%)
Graduate	9 (36%)
Postgraduate	3 (12%)
Parity	
Primiparous	8 (32%)
Multiparous	17 (68%)
Procurement of IFA tablet	
Private (free supply)	12 (48%)
Govt (free supply)	10 (40%)
Pharmacy	3 (12%)

[Table/Fig-2]: Background characteristics of study participants.

I. Patient-related Factors

A. Knowledge regarding anaemia: All the mothers had a basic knowledge regarding anaemia. The knowledge was greater among the more educated mothers and those who had a family member in a medical or paramedical profession. All women understood the meaning of anaemia, they described it either as blood count is low or blood is less. They all felt that anaemia is a normal phenomenon in pregnant women as she has to share her body with the child. Most of the mothers were aware that anaemia can affect the growth of the baby.

A 38-year-old multiparous women said that "As the baby grows inside the mother, it requires blood to grow so the blood level of the mother reduces." "I think it happens for every pregnant woman" (Patient 11).

A 30-year-old qualified graduate said that: "Decreased blood cell count is anaemia.", "My sister is a nurse and I have read about this.", "I was also informed by my doctor about anaemia" (Patient 10).

B. Irregularity in taking IFA tablets: All pregnant women had access to free IFA tablets but 24% (6) were not found to be consuming regularly during the current pregnancy. In the present study there were 17 multiparous pregnant mothers who were asked about the history of IFA consumption during the postnatal period of the last childbirth. Only 29.4% (5) reported to have consumed IFA tablets during that period and that too for only 2-3 months. However, all the women were informed by the healthcare workers to consume IFA tablets.

A 28-year-old multiparous woman said that "I skip the tablets for a few days because I forget to take them. My mom reminds me to take tablets" (Patient 7).

A 26-year-old multiparous woman said that "After my first delivery, the doctor prescribed me iron tablets for a year but I did not take it regularly." "I couldn't manage the baby and I had forgotten to take tablets." "During this pregnancy initially, my blood value was 9.1 g/dL and then 10.5 g/dL three months ago, now it is 12.5 g/dL. I am taking iron tablets in the mornings" (Patient 9).

A 26-year-old primiparous woman said that "I stayed with my mom till my 4th month and she took care of my diet as well as my medications. Now I set alarms on my phone for tablets and I take it" (Patient 18).

C. Usage of alternative medicines for anaemia: Few multiparous mothers (5) took herbal drugs or homeopathic remedies as an alternative to IFA tablets to manage anaemia. The reasons for taking alternate tablets were the side-effects with IFA tablets, and the suggestion by the family members.

A 38-year-old multiparous woman said that "After my previous deliveries, I was insisted on taking iron tablets by my doctors but I didn't take it. I was at my mother's house, where she prepared some homemade medicines. I took some homeopathy medicines also. I took those medicines for 2 years after delivery." (Patient 11).

II. Health System Related Factors

A. Place of procurement of IFA: IFA is available free in all Government and many private hospitals. Also, few of the private practitioners provide free IFA tablets from the time since the "Vandemataram" Scheme was launched where any private practitioners can enroll themselves in the scheme and the government provides free IFA tablets to the providers. Only three mothers were buying IFA tablets; all the others were consuming the free IFA tablets. The reasons they were buying was, "These tablets have less side-effects."

A 37-year-old, primiparous, IT worker said that "I'm aware that it is free. Initially, I took government tablets, then I went to a private hospital" (Patient 13).

B. Motivation from healthcare workers: Motivation from healthcare providers plays an important role in mothers' compliance to IFA tablets. Among the mothers who were irregular in their IFA usage, there was no follow-up from the healthcare workers with regard to IFA consumption. Few mothers were highly appreciative of the supportive role of the healthcare workers, who motivated them to continue IFA tablets in spite of the difficulty in taste and side-effects.

A 24-year-old primiparous woman said that-"Yes, I am taking iron, multivitamins, and calcium tablets; iron and calcium in the afternoon." In the mornings alone, I've been taking iron tablets as recommended by my doctor" (Patient 8).

C. Doctor's role in anaemia treatment and diet management: Most of the mothers expressed that their treating doctors advised them to take IFA tablets and improve their nutrition. Few mothers (6) expressed that the doctors spent enough time with them explaining about the role of diet and IFA, however in most instances (19) it was the health worker who spoke more about diet and anaemia.

A 24-year-old primiparous woman said that-"I used to have moringa leaves. I boiled the moringa leaves and drank the water." "My doctor had also advised me to take fruits like pomegranate, apple, vegetables like beetroot, and goat's spleen" (Patient 8).

III. Treatment-related Factors

A. Side-effects of IFA: One of the main reasons for irregular consumption of IFA tablets was side-effects like nausea and vomiting and disliking the taste of iron tablets.

A 29-year-old multiparous woman said that "I didn't take iron tablets regularly because I dislike the taste of iron, as it makes me nauseous" (Patient 6).

A 31-year-old primiparous woman said that "I took iron tablets in the morning but I had vomiting, so now I take them at night" (Patient 13).

B. Cost of IFA: Only three mothers were buying the medicines. All the mothers knew about the availability of free IFA tablets, however, these three mothers chose to buy IFA tablets, mainly because of the perception that these drugs are better in quality and have lesser side-effects.

A 37-year old, primiparous IT Worker said that "I am buying iron medicines because they are better than the free medicine. It costs around Rs 300/-per month for iron tablets." (Patient 13).

IV. Spouse and Family Support

Most mothers appreciated the support from their family members during the pregnancy. In many instances, it was the family members who supported the mothers to take regular medicines and make the necessary dietary changes during the pregnancy. Family support was found to have influence on the consumption of iron rich diets by the women. The women appreciated the role of their mothers and their spouse in their care and treatment. All the primiparous mothers and half of the multiparous mothers mentioned that their husbands accompanied them to the health centres for their regular check-ups. Husbands' support and encouragement helped the mothers to make dietary changes and improve their compliance to IFA.

A 26-year old Primiparous woman mentioned that "I stayed with my mother till my 4th month and she took care of my diet as well as my medications. A cook came to the house and prepared food for me, sometimes my mother would cook for me herself. Now at my husband's house, a cook from nearby comes and prepares healthy foods for me." (Patient 18).

DISCUSSION

The present study has explored the factors affecting the management of anaemia during pregnancy. Knowledge regarding anaemia was found to be the positive factor, women understood the meaning of the word anaemia that it is more common during pregnancy, signs and symptoms of anaemia like giddiness, tiredness etc., and also that anaemia can be managed through iron tablets, syrups and injections. Most mothers were aware of the iron rich foods such as pomegranate, apples, green leafy vegetables, liver, mutton etc., However, mothers expressed that they hardly consumed these foods as these were too expensive to be included in daily diet. Most of the diet counselling was too theoretical, and not practical enough for the mothers to easily incorporate in their daily routine. Healthcare workers need to be trained in giving appropriate diet counselling which includes food items which are affordable, easily available and socially acceptable.

In the present study, few pregnant women were found to have knowledge regarding adverse child outcomes of anaemia during pregnancy like effect on the growth of the baby in the womb if the mother is anaemic but none of the pregnant women was found to have awareness regarding serious complications of anaemia on women's health including death. This may explain the fact that while the majority (76%) of the women were found to be regularly consuming IFA tablets during the current pregnancy, only 29.4% multiparous women reported to have consumed IFA during the postnatal period of their last pregnancy. Studies have reported that if women do not believe that anaemia is a serious health problem, the positive attitude regarding IFA consumption and iron rich foods may not be enough to change the behaviour [16].

The reasons cited for non compliance with IFA tablets were found to be forgetfulness, side-effects like nausea and vomiting and disliking the taste of IFA tablets. These reasons were found to be similar to that reported by various studies done across India [11,17-19].

In the present study, it found that the counselling by doctors and healthcare workers regarding changing the time of consumption of IFA tablets from morning to night, consuming the tablets after food and replacing the IFA tablets available in free Government supply with different iron preparation helped women to overcome the side-effects of IFA tablets. Some study participants reported that mobile phone alarms, reminders by family members enabled them to take IFA tablets regularly. Studies done globally have reported that personalised counselling on managing side-effects and educating and involving other key decision makers in the household like husband, mother in-law helps in increasing compliance of IFA tablets during pregnancy [20]. It is also evidenced from a clinical trial conducted in Bangladesh where a nutrition programme conducted

for husbands of pregnant women showed a marked increase in intake of micronutrients and diversity in the diet of their wives [21]. Innovative technology like cell phone messages, reminder cards can be introduced in the national programme for improving adherence with IFA tablets in the target groups [22].

Limitation(s)

This study was conducted among pregnant women who were registered in the obstetrics department of a single medical college hospital, therefore, the findings cannot be generalised to the whole country.

CONCLUSION(S)

It is essential to address the operational gaps and the unique issues of treatment compliance in our society. Behavioural change communication needs to be specific and targeted; mothers need a better health and social support system to manage the side-effects of IFA, and the healthcare system needs to involve other key decision makers in the household like husbands, mother-in-laws to provide a supportive environment. Further qualitative studies are needed to unravel the critical issues in varied socio-demographic sections of our society. Alongside, we need well designed studies to study the impact of various social intervention strategies to improve treatment compliance among the pregnant mothers in our country. Good quality research can only give us the real answers to solve the perennial challenge of anaemia which the national health system is struggling to overcome.

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