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Original Research Article

Do the pregnant mothers utilize supplementary nutrition along with other antenatal services? A cross sectional study from Mangaluru, Karnataka state, India

C. S. Vishnu[1], Abhay Subhashrao Nirgude[1]*, Annie Rajarathnam[2], N. Navya[1], K. M. Akshaya[1]

[1]Department of Community Medicine, Yenepoya Medical College, Derlakatte, Mangalore, Karnataka, India
[2]Department of Obstetrics and Gynaecology, Yenepoya Medical College, Derlakatte, Mangalore, Karnataka, India

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***Correspondence:**
Dr. Abhay Subhashrao Nirgude,
E-mail: abhaynirgude@gmail.com

ABSTRACT

Background: Antenatal care services including supplementary nutrition services are the essential services for reducing maternal mortality. As per National Family Health Survey (NFHS) 4 data, 62% pregnant mothers received supplementary nutrition in Karnataka state and only 49.4% received health and nutrition education. Study was conducted to assess utilization of antenatal services with special reference to supplementary nutrition and advice on nutrition.
Methods: A cross sectional study was conducted among the mothers admitted in obstetrics and gynecology department of Yenepoya Medical College Hospital. All the 140 mothers admitted during August and September 2017 for safe confinement of pregnancy were enrolled in this study and data was collected using semi-structured questionnaire. SPSS software version 22 was used for data analysis. Descriptive statistics was expressed in terms of frequencies and percentages. Chi square test was used to study the factors association with utilization of antenatal services.
Results: Of the 140 participants, most of them i.e. 38.6% were in 25-30 years age group. The mean age was 46 years. Only 86 mothers (61.42%) received supplementary nutrition of whom only 53 (37.85%) had consumed it. Utilization of antenatal services was 100% with respect to minimum antenatal visits, routine laboratory investigations and TT immunization. Awareness about Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA) was very poor (5%). Educational status of mother was found to be associated with utilization of supplementary nutrition (p=0.026).
Conclusions: Utilization of routine antenatal services was reported to be very good. Efforts should be made to improve utilization about supplementary nutrition and awareness about nutrition education.

Keywords: Antenatal care, Supplementary nutrition, Postnatal mothers, IFA tablets

INTRODUCTION

Antenatal care provides platform for implementation of preventive, promotive, and curative services for pregnant mothers and thereby improve the maternal and neonatal outcomes. In addition to the regular antenatal checkups, World Health Organization (WHO) recommends dietary interventions like nutrition education on energy and protein intake/supplements[1]

Mothers residing in urban areas (89%), with higher education (93%) and highest wealth quintile (94%)

received antenatal care from skilled provider as compared to residing in rural areas (75%), with no schooling (61%) and lowest wealth quintile (57%) as per NFHS 4 data. However, with respect to supplementary nutrition and nutrition education the numbers are very unsatisfactory. Of the total surveyed only 36.3% (urban areas) and 47.4% (rural areas) pregnant mothers received supplementary nutrition in India. With respect to health and nutrition education 29.8% and 41.9% pregnant mothers in urban and rural India received it respectively.[2]

As many women in developing countries have nutritional deficiencies, it is estimated that almost half of the pregnant women worldwide have anemia, which means that the health risks for mother and child are high.[3] WHO recommends a minimum of four antenatal visits for pregnant women in order to receive tetanus toxoid vaccination, 100 iron and folic acid (IFA) tablets as prophylaxis for nutritional anemia, screening and treatment for infections and for identification of warning signs during the pregnancy.[4] Integrated Child Development Scheme (ICDS) provides supplementary nutrition (500 kcals and 18-20 grams of protein) to the pregnant mothers during the second and third trimester of pregnancy.[5]

In view of these facts, we have conducted the study to assess the utilization of antenatal services with particular reference to supplementary nutrition service utilization and consumption and nutritional advice among pregnant mothers admitted in a tertiary care hospital in Mangalore for safe confinement of pregnancy.

METHODS

A cross-sectional study was conducted during August and September 2017 among mothers admitted in ward of obstetrics and gynecology department, Yenepoya Medical College Hospital, Deralakatte, Mangalore for safe confinement of pregnancy. Postnatal mothers who were willing to participate were enrolled for the study. Accordingly data was collected from 140 mothers by census method. Institutional ethics committee approval was obtained. Data was collected by one to one interview method using predesigned, validated, structured questionnaire. Information was collected with respect to socio-demographic profile, utilization of antenatal services, supplementary nutrition received from anganwadi (take home ration), consumption of supplementary nutrition by mothers and advice on nutrition received. Data was analyzed using statistical package for social science (SPSS version 23) for windows. Descriptive statistics were reported as frequency and proportion for categorical variables. Chi square test was used to assess the association between utilization, consumption of supplementary nutrition and educational and socio-economic status of the mothers.

RESULTS

A total of 140 study participants were enrolled in our study. Majority of participants (38.6%) were of the age group 25-29 years. The mean age of the participants was 46 years.

Table 1: Socio-demographic characteristics of study participants (n=140).

Characteristics	Number	Percentage
Religion		
Hindu	47	33.6
Islam	63	45.0
Christian	28	20.0
Others	2	1.4
Educational status		
Illiterate	6	4.3
Primary school	43	30.7
High School	62	44.3
PUC	29	20.7
Socio economic status (modified BG Prasad classification)		
Upper class	33	23.6
Upper middle class	40	28.6
Middle class	53	37.9
Lower middle class	8	5.7
Lower class	6	4.2

Among the 140 postnatal mothers who has participated in the study 45% of mothers were following Islam, 44.3% were educated up to high school and 38% belonged to class III socio economic status.

Table 2: Antenatal service utilization by study participants (n=140).

Antenatal service utilization	Number	%
Registration of pregnancy	140	100
Minimum 4 antenatal check-ups	140	100
Weight measurement	140	100
Blood pressure measurement, blood examination, urine examination, abdominal examination, ultrasound scan	140	100
Injection tetanus toxoid (at least one dose)	140	100
Injection tetanus toxoid-two doses	61	43.6
Iron and folic acid tablets	140	100
Supplementary nutrition received (THR*)	86	61.4
Supplementary nutrition consumed (n= 86)	53	61.6
Advice on nutrition	133	95
Advice on warning signs (vaginal bleeding, convulsion, decreased fetal movements)	91	65
Informed about PMSMA#	7	05
Mothers escorted by ASHA for delivery	2	1.4

*Take home ration, #Pradhan Mantri Surakshit Matritva Abhiyan.

Table 3: Association between mother's education and supplementary nutrition received among the study participants (n=140).

Educational status of mother	Number received supplementary nutrition (%)		
	Yes	No	Total
Illiterate	04 (66.7)	02 (33.3)	06 (100)
Primary school	34 (79.1)	09 (20.9)	43 (100)
High school	31 (50)	31(50)	62 (100)
Pre university college	17 (58.6)	12 (41.4)	29 (100)
Total	86 (61.4)	54 (38.6)	140 (100)

Chi square value=9.23, df=3, p=0.026.

All the mothers had received a minimum of 4 antenatal checkups. IFA tablets were consumed and one dose of tetanus toxoid was received by all of our participants. Supplementary nutrition (THR) was received by 86 mothers (61.4%). Of those, 53 mothers consumed it and 63 mothers shared it with family members.

There is significant difference between educational status and mothers receiving supplementary nutrition (p=0.026). Proportions of mothers who have received supplementary nutrition were more among those who educated up to primary education as compared to those with high school and pre university education.

Table 4: Association between socio economic status and supplementary nutrition received among the study participants (n=140).

Socio economic status of mother	Number received supplementary nutrition (%)		
	Yes	No	Total
Upper class	25 (75.7)	08 (24.3)	33 (100)
Upper middle class	26 (65)	14 (35)	40 (100)
Middle class	29 (54.7)	24 (45.3)	53 (100)
Lower middle class	04 (50)	04 (50)	08 (100)
Lower class	02 (33.3)	04 (66.7)	06 (100)
Total	86 (61.4)	54 (38.6)	140 (100)

Chi square value=6.52, df=4, p value=0.16.

Mothers with higher socio-economic status reported to have received supplementary nutrition proportionately more than those belonged to lower socio-economic class. However, the difference was not statistically significant (p=0.16).

DISCUSSION

Our study highlighted one of the important components of antenatal care services i.e. supplementary nutrition and nutrition education. We found that there was 100% utilization of antenatal services with respect to minimum 4 antenatal visits, registration of pregnancy, IFA tablets and one dose of tetanus toxoid. Also, all mothers were examined at every visit for blood pressure and weight and subjected to routine blood examination, urine examination and ultrasound examination at least once.

Mothers were given education about nutrition (95%), warning signs and how to keep baby warm (65%). Very few mothers i.e. 7 (5%) were informed about PMSMA. Significantly, only two mothers reported that ASHA workers accompanied them for delivery. The less number may be attributed to the study setting (private medical college tertiary care hospital).

Of the 140 mothers, 86 (61.4%) received take home ration from the anganwadi centers and 53 (61.6%) of those actually consumed the supplementary nutrition. We found that 73% of the participants were sharing the supplementary nutrition with family members. A study conducted in North Karnataka reported that supplementary nutrition was not very regular (33%), not satisfied with quality (13%) and shared with family members (23%).[6]

We found that proportion of mothers with higher educational status utilized supplementary nutrition less as compared to those with education up to primary school. Lower utilization of supplementary nutrition was seen among mothers with lower socio-economic status. In this regard, efforts should be made to reach out to these mothers. Chudasama et al in their evaluation of ICDS program of Gujarat state reported 83.3% coverage of supplementary nutrition among pregnant and lactating mothers.[7] In order to enhance the utilization of nutrition related services from anganwadi, there is need to incentivize the services on the basis of performance.[8] Although health education was given regarding nutrition (95%) to almost all mothers, utilization and consumption remains unsatisfactory. Further research should study the factors associated with utilization and consumption of supplementary nutrition and means to improve them.

We found a cent percent utilization of antenatal services with respect to minimum 4 antenatal visits, IFA tablets, and one dose of tetanus toxoid along with measurement of weight, blood pressure and abdomen during every visit. This can be attributed to the high literacy rate in Dakshina Kannada district and better healthcare facilities with a network of 8 private medical colleges, two government district level hospitals and private health care providers.[9] Majority (81.39%) women who utilized full antenatal care were educated more than primary level in West Bengal.[10] About 87% pregnant women were checked for hemoglobin levels in first trimester in Trissur district and this figure was 95% in Trivandrum.[11,12] Another study from Kerala found that 91% mothers reported that their weight was recorded in the first antenatal visit itself.[13] A study from Central India showed that the majority of the respondents (85.7%) had knowledge regarding the antenatal care, followed by nutrition supplementation (81.43%), and immunization (80%).[14] With respect to IFA tablets, a study from Kanchipuram found that 91% mothers received the tablets.[15]

CONCLUSION

We found 100% coverage of antenatal care with respect to antenatal visits, IFA tablets, at least one dose of tetanus toxoid immunization, blood pressure and weight measurement at every visit. All mothers were subjected to routine blood, urine investigations and abdominal ultrasound. Four out of ten mothers did not receive supplementary nutrition. Of those, only six out of ten mothers consumed the take home ration received from the anganwadi centers.

Recommendations

- Government of Karnataka has launched Matru Poorna scheme to enhance utilization of supplementary nutrition.[16] As a part of this, pregnant and lactating women in rural areas will be served one cooked nutritious meal daily for 25 days in a month. Present study should be repeated after a year to understand the coverage following the implementation of the scheme.
- We recommend taking steps to reach out to the mothers with low economic status by networking with all stakeholders.
- Information education and communication (IEC) activities needs to conducted to enhance awareness about importance of nutrition.
- Health care providers should be sensitized about importance of health education regarding danger signs, nutrition and benefits of various schemes for mother and children.

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