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## A community-based study on the role of maternal education on antenatal care services and child care in a rural area, Adilabad, Telangana state

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### Abstract

**Background:** Educated women tend to have a greater awareness of the existence of ANC services, more aware of health problems, know more about the availability of health care services, and utilize the information more effectively than non-educated women. Moreover, higher levels of education tend to positively affect health-seeking behaviors, and education may increase a woman's control over her pregnancy. In this study, we tried to analyze to what level maternal education can influence antenatal care services and childcare. **Methods:** A community-based cross-sectional study was conducted on 150 randomly selected mothers who have children less than 7 years by using a pre-tested structured questionnaire for data collection at Shanthapur, a rural area, Adilabad district from January 2019 to February 2019. **Results:** Out of 150 study subjects, 12.6% (19) of the study subjects were not registered for antenatal services. Higher the maternal education more the birth spacing between the pregnancies ( $p < 0.05$ ), more preference for institutional deliveries ( $p < 0.05$ ), more the birth weight of the child ( $p < 0.05$ ), less number of baby hospitalization due to illness ( $p < 0.00001$ ). **Conclusion:** This study revealed that the utilization of ANC services was relatively better for the mother's educated higher than secondary school but they are still low. Educational status is important in having more health-seeking behavior. In this study, it proves that health education is more important than the mere school education which can help to improve knowledge on ANC.

**Keywords:** Antenatal Care, Maternal Education, Health Service Utilization, Rural

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### Introduction

Antenatal care services were considered to be a key element in the primary health care delivery system of a country which aims for a healthy society. Utilization of Antenatal Care (ANC) services and maternal and child health programs were critically important in a country like India which is experiencing high infant and child mortality rates and maternal mortality rates. As per NFHS-4, the Infant mortality rate declined in India from 57 in 2005-06 to 41 in 2015-16.

The infant mortality rate in rural areas was 46 in 2015-16 and urban areas; the Infant mortality rate was 29 in 2015-16<sup>[1]</sup>. Over the past sixty years, the maternal health situation in the country has been staggering despite several changes in a rapidly evolving socioeconomic environment. In the last decade, as per the national data, health indicators including utilization of antenatal care services were as poor as 60% in rural India<sup>[2]</sup>. Understanding the effect of infant and young child feeding (IYCF) practices on improving the nutritional status of

children less than two years of age, the World Health Organization (WHO) developed a set of core indicators to assess IYCF practices [3]. These indicators incorporated both breast-feeding and complementary feeding linked practices. Appropriate feeding practices, therefore, include timely initiation of the feeding of solid and semi-solid foods from age 6 months and to improve the quantity and quality of foods children consume, while maintaining breastfeeding [4]. Previous studies conducted elsewhere on factors associated with appropriate complementary feeding practices of children aged 6–23 months show higher maternal and paternal education, better household wealth, exposure to media, adequate antenatal and post-natal contacts, child’s sex and age, institutional delivery, low parity, maternal occupation, urban residence, knowledge & frequency of complementary feeding and receiving feeding advice in immunization as determinant factors for appropriate complementary feeding [5]. To improve complementary feeding practice through this essential time of growth and development of the child, assessment of complementary feeding practices and its factors are vital [2]. Among the various determinants of nutritional status, parent's education is probably the next most important factor after the socio-economic status. A literate mother uses scarce resources in 2 better manners for the child's welfare than an illiterate mother with higher resources does [6]. De Souza et al; believe that the effect of women's education on the nutritional status of their children is exerted through their roles as providers of household health and nutrition [7]. While the relationship between the mother's education and the child's nutritional status is well documented, that between the education of father or the education of both the parents put together and the child's nutritional status is not well established. Banerjee et al; says that the nutrition education of mothers of infants has a positive effect on the nutritional status of their children [8]. Glewwe (1999) highlights three links through which education may affect child health [9]. Other studies have found a strong link between maternal education, social-economic status and child nutritional status. This is because educated women are more likely to get steadier, higher-

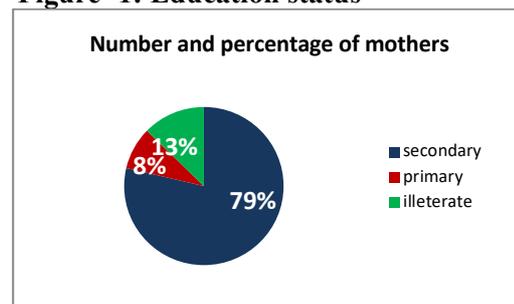
paying jobs; to get married to men with higher education and higher income; and to live in better neighborhoods, which have an influence on child health and survival [10].

## Materials and Methods

A community-based cross-sectional study was conducted on mothers who have children less than 7 years by using a pre-tested structured questionnaire for data collection at Shanthapur, a rural area 25 km from Adilabad, the town from January 2019 to February 2019. The study was conducted on 150 randomly selected women on convenience, house to house visit and taken consent. The analysis was done using SPSS for windows version 16, Microsoft excel and Open epi website.

## Results

Figure- 1: Education status



The study subjects selected for the study were mothers educated more than secondary school were 118(79%), primary educated were 13 (8%) and illiterate were 19 (13%)

Table- 1: Maternal education on age, registration for pregnancy, birth spacing

Age	Education			Total	P-Value
	Secondary	Primary	Illiterate		
less than 21 Years	47	10	8	65	0.0657
22-30 Years	68	2	10	80	
31-35	3	1	1	5	
<b>Registration of Pregnancy</b>					
Yes	103	11	17	131	0.92
No	15	2	2	19	
<b>Birth Spacing</b>					
Primi	60	3	6	69	0.028*
12-24m	28	7	10	45	
>24m	30	3	3	36	

\* Significant

The subjects selected for the study were in no way statistically different in their age groups and education. 12.6% (19) of the study subjects

were not registered for antenatal services. Higher the education more the duration of birth spacing and the association is statistically significant ( $p < 0.05$ ).

**Table- 2: Role of maternal education on Number of antenatal visits, the person conducting delivery and the place of delivery**

	Education			Total	p-value
	2 <sup>nd</sup> ry	Primary	Illiterate		
<b>Number of antenatal visits</b>					
less than 4	32	1	5	38	0.309
Above 4	86	12	14	112	
<b>Person conducted delivery</b>					
Dai and others	5	3	2	10	0.1114
Doctor	82	8	13	103	
ANM	31	2	4	37	
<b>Place of delivery</b>					
Hospital	113	10	17	141	0.027
Home	5	3	2	10	

In the study, 26% (5 of 19) of illiterate study subjects have less than 4 antenatal visits. 6.6% (10) of the study subjects were delivered by Dai or other personnel. Higher education were related with more the preference of hospital as a place of delivery and the association is statistically significant ( $p < 0.05$ ). 4.2% (5) of higher educated women were also delivered at home by Dai or other personnel ( $p = 0.027$ ).

**Table- 3: Role of maternal education on birth weight, number of breast feedings per day, exclusive breastfeeding, time of stoppage of breastfeeding**

	Education			total	p-value
	2 <sup>nd</sup> ry	primary	Illiterate		
<b>Birth weight</b>	2.87±0.48	2.45±0.56	2.91±0.54		0.014
<b>Pre-lacteal feeds</b>					
Yes	18(12%)	1	1	20	
No	99	12	18	130	
<b>Number of breastfeeding per day</b>					
<8	29	2	2	33	0.03
8 to 12	66	10	8	84	
>12	23	1	9	33	
<b>Exclusive breastfeeding</b>					
less than 6 months	32	4	1	37	0.1052
above 6 months	86	9	18	113	
<b>Total stoppage of breastfeeding</b>					
<1yr	5	0	0	5	0.495
>1yr	113	13	19	145 (98%)	

Higher education was related to the greater birth weight of the child and the association is statistically significant ( $p < 0.05$ ). 15.25% (18) of the highly educated mothers feed their children with pre-lacteal feeds. 89% (17 of 19) of illiterate mothers feed their children more than 8 times a day and the association is statistically significant ( $p = 0.03$ ). 27% of (32 of 118) study subjects educated more than secondary school stop exclusive breastfeeding by 6 months. 98%

(145) of the study subjects irrespective of the education status feed their children with breast milk for more than 1 year.

**Table- 4: Role of maternal education on baby hospitalization for sickness, proportion of wasting and stunted children**

	Education			total	p-value
	2 <sup>nd</sup> ry	Primary	Illiterate		
<b>Baby Hospitalization</b>					
Yes	12	4	9(45%)	25	0.00009*
No	107	9	10	125	
<b>Weight/Age of Child</b>					
<b>Wasting</b>					
Wasting	65 (55%)	5	9	79(52.6%)	0.46
Normal	53	8	10	71	
<b>Weight/Age of The Child</b>					
<b>Stunting</b>					
Stunting	51	6(46%)	7	64(42.6%)	0.842
Normal	67	7	12	86	
<b>Total</b>	<b>118</b>	<b>13</b>	<b>19</b>	<b>150</b>	

\* significant

In this study, 45% (9 of 19) of illiterate women had hospitalized their children during sickness episodes and the association is statistically significant ( $p = 0.00009$ ). 55% (65 of 118) children of mothers educated higher than secondary school were wasted and 52.6% of study subject children were wasted. Out of 46% (6 of 13) children of primary school educated mother-child were stunted and 42.6% of study subjects children were stunted.

## Discussion

The subjects selected for the study were in no way statistically different in their age groups and education. 12.6 % (19) of the study subjects were not registered for antenatal services compared to Bhanwar Singh et al; 28% of females not received antenatal care [11]. Higher education more the duration of birth spacing and the association is statistically significant ( $p < 0.05$ ) and similar to the study by Moataz Abdel Fattah et al; [12]. 26%(5 of 19) of illiterate study subjects have less than 4 antenatal visits compared to 40 % of illiterate subjects who have less than 4 antenatal visits in the study by Hiyeswar Borah et al; [13]. Higher education more the preference of hospital as a place of delivery and the association is statistically significant ( $p < 0.05$ ) is similar ( $p < 0.001$ ) to the study of Rodgers O Moindi et al; [14]. 24.4% of higher educated women delivered at home in the study of Rodgers O Moindi et al; [14] compared it is only 4.2% of higher educated women were also delivered at home by Dai or other personnel ( $p = 0.027$ ).

Higher the education more the birth weight of the child and the association is statistically significant ( $p < 0.05$ ) result is similar to the study of B.S.Akoijam et al; [15]. 23.54% of highly educated mothers feed their children with pre-lacteal feeds in the study of Vishnu Khanal et al; [16] compared it is 15.25 % of highly educated women feed their children with prelacteal feeds. 27% of (32 of 118) study subjects educated more than secondary school stop exclusive breastfeeding by 6 months. 98% (145) of the study subjects irrespective of the education status feed their children with breast milk for more than 1 year which is similar to the study by TigistKassa et al; [17] which is 91.9%. Sive et al; [6] while comparing 53 children hospitalized for kwashiorkor with 106 children hospitalized for non-nutritional diseases observed that the major difference between the two groups was the educational status of the mother. Only 57% of the mothers of the children with kwashiorkor were literate as compared to 93% of the controls. In our study, 45% (9/19) of illiterate women had hospitalized their children during sickness episodes and the association is statistically significant ( $p = 0.00009$ ). In a study carried out at Parbhani, Marathwada (Maharashtra), Arya et al; [18] have shown that the children of literate mothers have better anthropometric measurements than children of illiterate mothers. 52.6% of study subjects children were wasted compared to only 20.4 % of children in rural Telangana according to NFHS-IV [19] were wasted and 24.7% for rural Adilabad district according to NFHS-IV [20]. 42.6% of study subjects children were stunted compared to 33% of children in rural Telangana according to NFHS- IV [19] were stunted and 39% for rural Adilabad district according to NFHS-IV [20].

## Conclusion

This study revealed that the utilization of ANC services was relatively better for the mother's educated higher than secondary school but they are still low. In a few areas like the duration of breastfeeding the child, illiterate mothers perform better than higher educated mothers. Educational status is important in having more health-seeking behavior. In this study, it proves that health education is more important than the

mere school education which can help to improve knowledge on ANC. Providing IEC and house-hold level discussion is important for ANC service utilization in the district.

**Conflict of Interest:** None declared

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