

## Original Research Article

# A prospective study of adolescent pregnancy complications in a rural area of South India

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## ABSTRACT

**Background:** Adolescent pregnancy is dangerous for the mother, child and the community and teenage girls are twice as likely to die of pregnancy and childbirth related complications as opposed to older women. Aim was to know the complications of adolescent pregnancies. And to study the socio-demographic profile of adolescent pregnancies.

**Methods:** A total of 144 adolescent pregnant women, aged between 15-19 years were selected for the prospective study. Information on their socio-demographic variables and pregnancy complications was recorded during 3 study visits. The study was carried out at Vantamuri primary health centre-rural field practice area of J. N. medical college Belgaum, India for a period of 1 year.

**Results:** In the current study majority, 66.0% participants were of 18-19 years age and were unemployed. Complications of pregnancy like PIH (4.3% versus 8.5%) and pre-term deliveries (22.4% versus 32.6%) were more seen in late adolescents. However, low birth weight was more in children born to young adolescents (42.6% versus 36.2%). Significant associations were found between age and anemia ( $p=0.013$ ) and occupation ( $p=0.040$ ) and socio-economic status (0.028) with mode of delivery.

**Conclusions:** The mean age of participants was 17.8 years and complications like anemia, low birth weight, caesarean section and preterm deliveries varied with age of teens. Thus, periodic IEC activities must be held to improve their health.

**Keywords:** Adolescent pregnancy, Complications, Prospective study, Rural South India

## INTRODUCTION

‘Adolescence’ is the transition from childhood to adulthood. It is defined by the World Health Organisation (WHO) as period between 10-19 years of age. Adolescence represents a key stage in development and a critical opportunity for ensuring successful transition to adulthood.<sup>1</sup>

In recent times, adolescent pregnancy has become a significant health issue in both developed and developing

countries. The latest international estimates indicate that worldwide about 16 million women 15-19 years old give birth each year, representing 11.0% of all births worldwide. Ironically, half of all adolescent births occur in just seven countries: Bangladesh, Brazil, the Democratic Republic of the Congo, Ethiopia, India, Nigeria and the United States.<sup>2</sup>

Adolescent pregnancy is emerging as a grave problem all over the world and more so in developing countries like India where premature marriages and before time

pregnancies are conventional and customary.<sup>3</sup> Teenage pregnancy is precarious for the mother, child and the community.

Although teens account for 11.0% of all births worldwide, they account for 23.0% of the overall burden of disease due to pregnancy and childbirth.<sup>4</sup> Medical complications such as pre-term labour, pregnancy induced hypertension, anaemia and low birth weight babies are strongly associated with adolescent pregnancy. Teenage girls are twice as likely to die of pregnancy and childbirth related complications as opposed to older women.

Although there is mounting evidence for action to uphold adolescent reproductive health, work done is mostly very little. In this backdrop, as no study about adolescent pregnancy was done in this area, a study to know the complications and socio demographic factors associated with adolescent pregnancy was accomplished.

## METHODS

A community based prospective study was carried out in the field practice area of J. N. M.C, Belgaum - a rural PHC with 5 sub centers. Approximate pregnant women in that area were 655 and allowing for adolescent pregnant women to be 20.9% (NFHS-3), a total of 144 teen pregnant women, aged between 15-19 years were enrolled for duration of one year from 1<sup>st</sup> January 2012 to 31<sup>st</sup> December 2012.

The study included three visits with first being enrolment, second between 28-36 weeks of gestation and third in their post-partum period between 0-30 days to record their outcome. Women were interviewed with a predesigned, pretested questionnaire to know about their socio demographic details in first visit and pregnancy details in subsequent visits.

### Outcome variables

The pregnancy complications like PIH, anemia, pregnancy duration and birth weight of the child was considered for the study. PIH was defined as blood pressure of more than 140/90 mm Hg after 20<sup>th</sup> week of gestation and anemia was classified into mild, moderate and severe according to their hemoglobin estimation as per the WHO standards.<sup>5</sup> Pregnancy of less than 37 weeks was considered as pre-term and birth weight of <2.5 kg as low birth weight.<sup>6</sup>

### Statistics

Numerical socio-demographic variables were analyzed by means and standard deviations and categorical data were summarized using percentages. Chi square test was used to find the association between various socio demographic variables and teenage pregnancy outcomes.

## RESULTS

In the current study majority, 95 (66.0%) participants were between 18-19 years age, with their mean age being 17.8±1.1 years, and 127 (88.2%) were Hindus by religion. As many as 130 (90.3%) teens were housewives had studied up to high school and above (53.5%). Most, 65 (45.1%) of the teens belonged to class IV socio-economic status as per modified B G Prasad classification and 110 (76.4%) were living in a joint family (Table 1).

**Table 1: Socio-demographic profile of adolescent mothers (N=144).**

Characteristics	Number	Percentage
<b>Age</b>		
15-17	49	34.0
18-19	96	66.0
<b>Religion</b>		
Hindu	127	88.2
Non-Hindus	17	11.8
<b>Occupation</b>		
Homemaker	130	90.3
Employed	14	9.7
<b>Education</b>		
Illiterate	29	20.1
Primary school	38	26.4
High school and above	77	53.5
<b>Family Type</b>		
Joint family	110	76.4
Nuclear family	34	23.6
<b>Socio-economic status (modified B G Prasad classification)</b>		
Class I	0	0.0
Class II	15	10.4
Class III	38	26.4
Class IV	65	45.1
Class V	26	18.1

About 79.2% of them were primigravidae and 81.9% of the participants had registered their pregnancy within 12 weeks of gestation. All the teenagers in the study had taken iron and folic acid and TT injections as necessary.

### Pregnancy Complications

A total of 3 (2.1%) teens had abortion and were not included in the second and third visit. Thus, complications were observed for a total of 141 participants. Among them PIH was present in 7.1% of teens and 2.1% were severely anemic and a majority (54.9%) were diagnosed to have mild anemia. About 31.9% of adolescents had preterm delivery, 21.9% delivered by LSCS and 38.3% had given birth to children with low birth weight (Table 2). There were statistically significant associations found between age and anemia ( $p=0.013$ ) and mode of delivery with occupation ( $p=0.040$ ) by way of LSCS as mode in majority of

housewives (24.4% versus 0.0%) and socio-economic status ( $p=0.028$ ) with increasing participants belonging to higher socio-economic class undergoing LSCS.

**Table 2: Distribution of participants according to complications of adolescent pregnancy (N=141).**

Complications	15-17 years	18-19 years	P
	No. (%)	No. (%)	
<b>PIH</b>			
Present	2 (4.3)	8 (8.5)	0.562
Absent	45 (95.7)	86 (91.5)	
<b>Anaemia (g %):</b>			
Severe (< 7.0)	2 (4.1)	1 (1.1)	0.013*
Moderate (7.0-9.9)	15 (30.6)	14 (14.3)	
Mild (10.0-10.9)	27 (55.1)	52 (54.7)	
No anaemia (> 11.0)	5 (10.2)	28 (29.5)	
<b>Period of gestation</b>			
Full term	34 (69.4)	58 (61.1)	0.238
Preterm	18 (22.4)	31 (32.6)	
<b>Mode of delivery</b>			
Vaginal	37 (78.7)	73 (77.7)	0.886
LSCS	10 (21.3)	21 (22.3)	
<b>Birth weight</b>			
<2.5	20 (42.6)	34 (36.2)	0.415
>2.5	27 (57.4)	60 (63.8)	

## DISCUSSION

In the current study, the mean age among the study population was  $17.8 \pm 1.1$  years, majority were Hindus by religion, housewives, studied up to high school and beyond and belonged to Class IV socio-economic status. These findings were in consistence with the studies conducted at Bangalore and Delhi.<sup>3,7</sup>

Here, complications like full term deliveries were more in mid adolescents but pre-term deliveries and low birth weight were higher among late adolescents. PIH and LSCS were present in majority in late adolescents.

Due to this inconsistency, there was no statistical significance found between these variables. This discrepancy was probably because there is no much physical and physiological difference between mid and late adolescents and that there are other socio economic and family factors in rural area which would influence the pregnancy and age alone may not be the factor responsible for the adverse implications.

As the age increased, anemia decreased, with severe, moderate and mild anemia being more present in girls between 15-17 years age group and this was statistically significant ( $p=0.013$ ). In a study conducted by Agudelo et al, converse to this study, PIH and LSCS were more seen

in mid adolescents than old teens however consistent with the present study, anemia and low birth weight was common in 15-17 years adolescents.<sup>8</sup>

In similar studies by Fraser et al at USA and Chen et al, LBW was more noted in adolescents less than 17 years than between 18-18 years.<sup>9,10</sup> Occupation had significant association with mode of delivery and socio-economic class as people with better economic conditions were affordable for caesarean section and did not take risks in case of any complications in pregnancy and labor process.

## CONCLUSION

The current study revealed that teen pregnant women were more between 18-19 years of age and complications like anemia, preterm deliveries were present. Numerous factors like age, education, occupation, socio-economic status, previous pregnancies influenced the various complications of teenage pregnancy.

Hence, the present study recommends that to improve the health of the adolescents, periodic IEC activities must be held at village level and informed about complications and ill effects of teenage pregnancy. Child marriage act must be stringently imposed to restrain child marriages.

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