Research Article

Determinants and outcome of early marriage among adolescents: A descriptive study

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Abstract

Aim: The present study was aimed to study different social, obstetric, and antenatal characteristics in adolescent married girls and compared them with primigravida women. **Subjects & methods**: The descriptive study was conducted among lactating adolescent mothers within the age group of 15-24 years residing in Pimpri Chinchwad Municipal Corporation (PCMC) slums. The subjects were mothers and should have children below 24 months for adolescent girls and primigravida (a mother with a living child 0-24 months). **Results:** The proportions of younger women [i.e. 15 – 19 years] were significantly more among adolescent marriage girls as compared to primigravida women [2.4% vs 40.0%, p < 0.0001]. However, thought not statistically significant, the proportion of less educated [up to primary level] [11.8% vs 25.9%, p = 0.135], labourer/construction labourer [10.6% vs 23.5%, p = 0.164], SC / ST women [28.3% vs 29.5%, p = 0.874], OBC women [25.9% vs 30.6%, p = 0.874], Buddhist [11.8% vs 15.3%, p = 0.631] and living in a joint family [43.5% vs 49.4%, p = 0.723] were more among adolescent married girls as compared to primigravida women. Surprisingly, high duration of stay in urban place i.e. Pune city [35.3% vs 44.7%, p = 0.32] was more among the adolescent married girls as compared to primigravida women. The association of status of receiving antenatal services [ANS] during the pregnancy was not statistically associated with age at the first pregnancy [study/control group] [91.8% vs 82.4%, p = 0.152]; but provides mathematical relationship of less proportion among adolescent married girls as compared to primigravida women. **Conclusion:** Our study found important determinants of adolescent marriage including education, poverty, social pressure etc, which ultimately determine pre-natal and perinatal characteristics.

Keyword: Adolescent, primigravida women, descriptive study

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1. Introduction

The reproductive characteristics of adolescents in India still remain a challenge for the policy makers and public health experts [1]. The issue of reproductive health needs get magnified within the community because of their poverty and vulnerability due to sexual exploitation. In India, the transition from childhood to adulthood, especially in girls tend to occur suddenly. Due to the poor nutritional status, the adolescents face late menarche as compared to other parts of the world. On the other hand, early marriage and pregnancy also leads to females entering early into the stage of adulthood. By 2020, an estimated 23.6 million pregnancies will result in 17.6 million births to adolescent which needs immediate attention. Among young women age 15-19 in Maharashtra, 13.8 percent have already begun childbearing, a little lower than the national average (16%). The problem of early marriage

of girls still prevails. The Schedule Caste and Schedule Tribes are considered vulnerable groups who suffer from multiple deprivations also finds place in the study, giving valuable inputs in this area. So the study will try to unmask the urban poor realities about the causes and determinants which is still a hindrance in path of overall development to make the reach the MDG a reality. Review's show, being a wealthy and developed state does not guarantee there is equity in access to health and health care [2].

The social realities of health and illness are obvious areas of focus if we want to understand special features of the present life. Social scientist does not merely look upon as an intellectual quest but the need to understand central experiences of the society of which they are a part. It will provide valuable inputs to Government, professionals other groups of interest as guidance to understand the nature, determinants, causes and consequences. Sociologist studied health and illness not

only because they are intrinsically interesting, but also because they provide a broader view of functioning of the society [3]. He further stated, WHO argued that the health and illness patterns once laid down during childhood, and that the impact of an underprivileged childhood on a person's health is not likely to be overcome in adulthood. If one's life begins with illness that continues for years. Later, medical intervention is not able to make up for the impact fostered due to poverty (consequent poor nutrition, housing and clothing), lack of health care information for pregnant women, and lack of access to nursing care and advice following the birth of an infant. In fact, a single best intervention that any government can make to improve the health of its population is provision of universal, free care for mothers-to- be and newborn infants. This makes the study more significant in the Indian scenario to see sociological and heath vulnerabilities, which the adolescent mothers face [4].

Safe motherhood is considered as a moral issue, more than just a health issue. Safe motherhood is an important social economic instrument leading to social justice and reproductive freedom. One way the investment in safe motherhood saves families and governments the cost of treatment and other services [5]. Urban Health, which is still in the budding stage in India, to bring health equity among the urban poor and the backward communities and recommend active surveillance system for intervention to reduce incidences of adolescent pregnancy, will be one of its prime significance. Studies have shown that delaying adolescent birth could significantly lower fertility rate, thus reduce morbidity benefitting the society economically and socially.

The present study attempts suggest measures and strengthen adolescent reproductive health. In the present study, we evaluated the socio cultural and medical determinants of adolescent marriage and pregnancy in urban slum areas.

2. Subjects and methods

The descriptive study was conducted among lactating adolescent mothers within the age group of 15-24 years. The women enrolled were married women and staying with their husband/in-law or maternal home and residing in Pimpri Chinchwad Municipal Corporation (PCMC) slums. The subjects were mothers and should have children below 24 months for adolescent girls and primigravida (a mother with a living child 0-24 months) .The primary determinant criterion for inclusion of the respondents was age irrespective of caste, religion, state etc. The group was divided later into study and control group, study group consisted or adolescent married girls and control group consisted of adult primigravida women. Inclusion criteria of the study were: any lactating women who has a (one/2 living) child of 0-2 years and fall in the age category of 15-19 years, or any lactating women who has a (one) child of 0-2 years and fall in the age category of 20-24 years, or any women

who recently had an abortion (induced or spontaneous)/or infant death /still birth and fall in the age group of 15-24 yrs (where included in case study), and all these women should be a resident of slum /chawl/JUNNRUM house.

Sampling process

Three-stage cluster random sampling– probability proportional to size was used. In cluster sampling out of Administrative zone A, B, C, D, E, F, four zones were selected A, B,C and E randomly. Cluster sampling was useful because the population under the study was dispersed, it helps the population to be divided into subpopulation in clusters and clusters were sampled randomly. The 71 slums (notified and un notified slums) were distributed in the and 6 administrative zones.

First stage: Slums from 4 administrative zone selected and listed , 26 Slums coming in the central area of PCMC were selected by random sampling for representation .All the 26 slums (36%) were visited from 2012- February 2013 and as per the consent and inclusion /exclusion criteria finally 18 slums/Chawls were selected.

Second stage: All the Anganwadi's of visited slum was marked and lactating mothers were listed falling in the age group of 15-24. Based on the inclusion and exclusion criteria and availability of target population 16 slum and 2 chawls were selected having ICDS units i.e 18 pockets (25.35%). Sampling frame of Anganwadi's and the local community personnel were included in the study .The lactating mothers were randomly selected out of the available list based on inclusion criteria. In the second stage there was lot of drop out (attrition) as they did not fall in the study.

Third stage: 200 lactating women/special case women were selected in randomly falling in the age group 15-24 years from the figures given below.170 cases were finally enrolled for the quantitative study and
Total slums in PCMC: 71
Total Areas selected as well as visited: 26 (36.61%)
Selected for final study: 18 (25.35%)

The study covered 18 slums/chawls from PCMC namely Vidyanagar, Dalvinagar, Gandhinagar, Ajantanagar, Bhimnagar, Morewadi Slum, Ganeshnagar, Bhatnagar/Baudhnagar, Kharalwadi, Shantinagar, Dattanagar, Ramnagar, Landewadi, Milindnagar, Indiranagar, Gawlimata, Bhimsaktinagar and Khandobamal out of the visited 26 slums.

Tools for data collection

- **Quantitative study tool:** As the study was retrospective, schedule helped in face to face interview, observation and inspecting the medical record where ever available.

- **Secondary data collection**
  Secondary data collection is very crucial in the study to find the outcome of the pregnancy. Hence PCMC health department, Nagar Vasti Department, Private hospital, ICDS Units, Skilled /unskilled dais of the region were covered to collect information on maternal & infant mortality, health infrastructure, Population, Lactating women figures, for slum details

Ethical approval

Ethical approval for the study was obtained from an Independent research body 'Lokmanya Medical Research Center Ethics Committee'.

Data analysis

The results were expressed as frequency and percentages. Difference between categorical variables was calculated using Chi-suare test. P value <0.05 was considered significant. Statistical analysis was performed using SPSS trial version 21.

3. Results

The control group was defined as group of the respondents, who were between the age of 20 – 24 years at the first pregnancy and referred as 'Primigravida women'; whereas, study group was defined as the groups of respondents, who were between the age of 15–19 years and referred as 'adolescent marriage girls' or adolescent mothers.

The proportions of younger women [i.e. 15 – 19 years] were significantly more among adolescent marriage girls as compared to primigravida women [2.4% vs 40.0%, p < 0.0001]. This suggests that early age at marriage is more among adolescent married girl and forces them to be part of adolescent pregnancy as compared to their counterparts. However, thought not statistically significant, the proportion of less educated [up to primary level] [11.8% vs 25.9%, p = 0.135], labourer/construction labourer [10.6% vs 23.5%, p = 0.164], SC / ST women [28.3% vs 29.5%, p = 0.874], OBC women [25.9% vs 30.6%, p = 0.874], Buddhist [11.8% vs 15.3%, p = 0.631] and living in a joint family [43.5% vs 49.4%, p = 0.723] were more among adolescent married girls i.e. study group as compared their counterparts i.e. primigravida women. Surprisingly, high duration of stay in urban place i.e. Pune city [35.3% vs 44.7%, p = 0.32] was more among the adolescent married girls as compared to primigravida women. A detailed analysis has been shown in table 1.

Table No 1:

Socio-demographic characteristics	Control Group [Primigravida women: 20 - 24 yrs], n = 85		Study Group [Adolescent married girl: 15 - 19 yrs], n=85		P - value [Chi-square test]
	N	%	N	%	
Current age of respondents					P < 0.0001
15 - 19 years	2	2.4	34	40.0	
20 - 24 years	83	97.6	51	60.0	
Median age [I. Q. R.]In years					
Education					0.135
Up to Primary [1st - 4th Std.]	10	11.8	22	25.9	
Middle [5th - 7th Std.]	31	36.5	26	30.6	
Secondary [8th - 10th Std.]	29	34.1	24	28.2	
Higher Secondary and above	15	17.6	13	15.3	
Relationship with the head of the family					0.691
Wife	43	50.6	37	44.0	
Daughter / Grand-Daughter	5	5.9	5	6.0	
Grand-Daughter					
Daughter-in-law / Sister-in-law / Others	37	43.5	42	50.0	
Occupation					0.164
Labourer / Construction labourer	9	10.6	20	23.5	
Domestic worker / Hawker / Vegetable vendor / Others	10	11.8	8	9.5	
Self employed	5	5.9	5	5.9	
Home maker	61	71.8	52	61.2	
Economic status					0.10
< = Rs. 3000	9	39.1	11	35.5	
Rs. 3001 – Rs. 5000	13	56.5	12	38.7	

Socio-demographic characteristics	Control Group [Primigravida women: 20 - 24 yrs], n = 85		Study Group [Adolescent married girl: 15 - 19 yrs], n=85		P - value [Chi-square test] N
	N	%	N		
Rs. 5000+	1	4.3	8	25.8	
Caste					0.874
General	31	36.5	27	31.8	
SC / ST	24	28.3	25	29.5	
OBC	22	25.9	26	30.6	
VJ / NT	8	9.4	7	8.2	
Religion					0.631
Hindu	65	76.5	65	76.5	
Buddhist	10	11.8	13	15.3	
Others [Muslims, Christian]	10	11.8	7	8.2	
Muslim					
Place of origin – State					0.141
Maharashtra	70	82.4	62	72.9	
Non-Maharashtra [Bihar, Karnataka, Other states]	15	17.7	23	27.1	
Duration of stay in Pune city					0.322
< = 5 years	46	54.1	42	49.4	
6 - 10 years	9	10.6	5	5.9	
10+ years	30	35.3	38	44.7	
Median duration of stay [in years]					
Reasons for migration					0.325
Born & Brought / Husband migrated for job / Job / Job & Marriage	5	5.9	6	7.1	
Marriage	38	44.7	27	31.8	
Parents migrated	28	32.9	38	44.7	
Relative house / Work	14	16.5	14	16.5	
Type of family					0.723
Nuclear	44	51.8	40	47.1	
Joint	37	43.5	42	49.4	
Extended	4	4.7	3	3.5	

The proportion of getting married below 18 years was significantly more among adolescent married girls [14.1% vs 62.4%, p < 0.0001] than primigravida women; which are replicated in the mean age at marriage and was below the legal age of marriage. The mean age of adolescent married girl at the time marriage was significantly less [17 years vs 19 years, p < 0.0001] than primigravida woman. Additionally, the reason for early marriage among the study group was the economic problems /poverty. The proportion of respondents stating the personal reason as 'economic problems/poverty' were more among adolescent married girls [24.7% vs 40.0%, p = 0.004] than primigravida women. The decision about the marriage was mostly taken by the 'father' and proportion of decision maker as a 'father' was approximately similar in both the groups [control group − 50.6%, study group − 49.4%]. More than one third [36.5%] of adolescent married girls were studying when got married as compared the primigravida women [29.4%]; which is reflected in the reasons for leaving school / college. The proportion of leaving school / college due to marriage were more among study group [20.0% vs 29.4%, p = 0.328] than control group.

Subsequently, the proportion of husbands married below legal age of marriage i.e. below 21 years was more among adolescent married girls [10.6% vs 25.9%, p = 0.025] than their counterparts with mean age at marriage of 22 years [vs 24 years, p = 0.01]. In addition, more than half of the adolescent married girls [54.1%] married to relatives from their extended families; which was less in primigravida women [48.2%].

The proportion of adolescent married girls educated about menses / menstrual hygiene were significantly less [70.6 Vs 51.8%, p = 0.017] than their counterparts. Surprisingly, 'mothers' were the person to educate about menses among adolescent married girls [54.5% vs 48.3%] and teachers [30.0% vs 15.9%] and friends [16.7% vs 11.4%] were the persons to educate about menstrual hygiene among primigravida women. Likewise, proportion of adolescent married girls educated about the sex education were significantly less [34.1% vs 17.6%, p = 0.014] than primigravida women. In this case, mothers [17.2% vs 33.3%], friends [11.0% vs 20.0%] and others [5.0% vs 26.0%] were source of information for sex education among adolescent married girls and teacher [27.6% vs 20.0%] was the primary source about the sex education among primigravida

women. Almost in both the groups, respondents had wanted to conceive in the first year itself [35.3% vs 36.5%]. In adolescent married girls, more than three-fourth [52.6% vs 77.1%] had no idea of pregnancy and near to one-fourth [23.7% vs 11.4%] among primigravida reported to conceive in the first year itself since mother-in-law wanted it. The preference to have a boy or girl was significantly associated with age at first pregnancy i.e. study/control group [p = 0.029]; which indicates that the more proportion of no preference [9.4% vs 20.0%] and less proportion of healthy baby [29.4% vs 16.5%] was observed among adolescent married girls compared to their counterparts. Among primigravida women, 'father' [69.4% vs 31.8%, p < 0.0001] was reported as a person to determine the sex of child; whereas, among adolescent married girl, 'God' [29.4% vs 63.5%, p < 0.0001] was reported as a person to decide the sex of child. The proportion of wanting 'one' boy-child [control group – 62.4%; study group– 64.7%] was approximately similar and for girl-child, it was more among adolescent married girl [56.5% vs 64.7%] than their counterpart was. When asked about the decision maker about the family size, there was no significant difference in the proportion of persons deciding the family size [mother-in-law: 40.0% vs 32.9%, p = 0.339; Father-in-law: 9.4% vs 8.2%, p = 0.787; Husband: 62.4% vs 58.8%, p = 0.638 and Her-self: 10.6% vs 8.2%, p = 0.599].

Table No 2:

Marriage and Gender characteristics	Control Group [Primigravida women: 20 - 24 yrs], n = 85		Study Group [Adolescent married girl: 15 - 19 yrs], n=85		p - value [Chi-square test]
	n	%	n	%	
Age at marriage of the respondent					p < 0.0001
< 18 years	12	14.1	53	62.4	
18 and above years	73	85.9	32	38.2	
Mean age at marriage [S. D.]	85	19.3 [± 1.6]	85	16.7 [± 1.5]	p < 0.0001
Husbands' age at marriage					0.025
< 21 years	9	10.6	22	25.9	
21 - 25 years	57	67.1	51	60.0	
25+ years	19	22.4	12	14.1	
Mean age of Husband at marriage [S. D.]	85	23.7 [± 2.6]	85	22.4 [± 4.0]	0.01
Husband relative [in case of marriage]	41	48.2	46	54.1	0.443
Aware about the legal age of marriage [n=116]	72	98.6	41	95.3	0.282
Person who took the decision of marriage					0.768
Father	43	50.6	42	49.4	
Elder male family member	18	21.2	15	17.6	
Mother	11	12.9	10	11.8	
Others	13	15.3	18	21.2	
Studying when got married	25	29.4	31	36.5	0.328
Reasons for leaving school / college					
Marriage	17	20.0	25	29.4	0.155
Distance of School	22	25.9	23	27.1	0.862
Non-availability of transport facility	6	7.1	2	2.4	0.147
Parents not interested in study	29	34.1	27	31.8	0.744
Elders objected	5	5.9	3	3.5	0.469
All the above	4	4.7	1	1.2	0.173
Others	10	11.8	7	8.2	0.443
Personal perception/reason of getting married by the parents					0.004
Both parents working so it is not safe to keep girls alone at home	7	8.2	17	20.0	
Urban place is not safe for grown-up girls	11	12.9	11	12.9	
Scared that I will elope	4	4.7	3	3.5	
Economic problem / Poverty	21	24.7	34	40.0	
Others	42	49.4	20	23.5	

We also evaluated obstetric care characteristics by the age at first pregnancy [i.e. 15 – 19 years and 20 – 24 years]. There was no association observed between the age of attaining menarche and age at first pregnancy [p = 0.319]. In addition, there was also no difference in proportion of respondents using 'physical examination' [60.0% vs 60.6%, p = 0.875] and 'urine test' [95.3% vs 91.8%, p = 0.35] to confirm the pregnancy between the

control and study groups. The weight of respondent was significantly associated with age at first pregnancy [p = 0.009]; suggesting that proportion of respondents with weight less than 40 kg was more among adolescent married girls [11.0% vs 26.6%] as compared to their counterparts. Similarly, the age at the time of delivery was also significantly associated with age at first pregnancy [p < 0.0001]; suggesting that the proportion of respondents delivered before 18 years [i.e. at early age or before legal age at marriage] was more among adolescent married girls [1.2% vs 41.2%] as compared to primigravida women. Moreover, early marriages impacted the weight of the baby in this study; suggesting that proportion of respondents having weight of babies below 2500 gm was more among adolescent married girls [15.3% vs 36.5%, p = 0.007] as compared to their counterparts.

During pre-natal period, the proportion of complications during pregnancy was more among adolescent married girls [36.5% vs 75.3%, p < 0.0001] as compared to their counterparts. The similar observation was found during the peri-natal period [child]; indicating more proportion of complications among adolescents as compared to primigravida women [60.0% vs 100.0%, p < 0.0001]. In addition, though the abortions occurred during the pregnancy period is not statistically associated with age at first pregnancy, but suggests that it was more among study group [5.9% vs 12.9%, p = 0.115] as compared to control group. However, the proportion of neo-natal deaths was significantly more among adolescent married girls as compared to primigravida women [0% vs 4.7%, p=0.043]. Detailed presentation of obstetric characteristic has been shown in table 3.

Table No 3:

Obstetric history characteristics	Control Group [Primigravida women: 20 - 24 yrs], n = 85		Study Group [Adolescent married girl:15 - 19 yrs], n= 85		p - value [Chi-square test]
	N	%	N	%	
Age of attaining menarche					0.319
< 15 years	74	87.1	78	89.4	
15 and above years	11	12.9	7	10.6	
Test of confirmation of pregnancy -					
Physical Examination	51	60.0	52	60.6	0.875
Blood test	9	10.6	8	9.4	0.798
Urine test	81	95.3	78	91.8	0.35
Ultrasound	11	12.9	7	8.2	0.319
All of above	6	7.1	2	2.4	0.147
None of above	0	0.0	5	5.9	0.023
Weight of the respondent [n=161]					0.009
< = 40 kg	9	11.0	21	26.6	
41 - 45 kg	23	28.0	27	34.2	
45+ kg	50	61.0	31	39.2	
Body mass index [n=161]					0.151
Under-weight [BMI < 18.5 kg/m^2]	17	20.7	26	32.9	
Normal [BMI: 18.5 – 25 kg/ m^2]	54	65.9	47	59.5	
Overweight / Obese [BMI > = 25 kg/ m^2]	11	13.4	6	7.6	
Gender of the child					0.443
Male	46	54.1	41	48.2	
Female	39	45.9	44	51.8	
Age at the time of delivery					p < 0.0001
< = 18 years	1	1.2	35	41.2	
19 - 21 years	56	65.9	44	51.8	
21+ years	28	32.9	2	2.4	
Weight of the baby					0.007
< 2500 gms	13	15.3	31	36.5	
2500 - 2999 gms	42	49.4	32	37.6	
3000 and more	30	35.3	22	25.9	
Current age of the child [in months]					0.61
< = 12 months	55	64.7	50	58.8	
13 - 18 months	21	24.7	22	25.9	
18+ months	9	10.6	13	15.3	
Place of the delivery					0.306
Home	8	9.4	9	10.6	

Obstetric history characteristics	Control Group [Primigravida women: 20 - 24 yrs], n = 85		Study Group [Adolescent married girl: 15 - 19 yrs], n= 85		p - value [Chi-square test]
	N	%	N	%	
PHC / PCMC	52	61.2	42	49.4	
Private Hospital	23	27.1	28	32.9	
Others	2	2.4	6	7.1	
Delivery conducted by					0.389
Mother	2	2.4	2	2.4	
Relative / Mother	3	3.5	0	0.0	
UTBA	0	0.0	2	2.4	
TBA	1	1.2	1	1.2	
ANM	3	3.5	2	2.4	
Doctor	76	89.4	78	91.8	
Type of delivery					0.306
Normal delivery	63	74.1	70	82.4	
Caesarean delivery	21	24.7	15	17.6	
No answer	1	1.2	0	0.0	
Apparatus used to cut the umbical cord when delivery was conducted at home [n=17]					0.374
Blade	3	37.5	2	22.2	
Scissor	4	50.0	7	77.8	
No answer	1	12.5	0	0.0	
Complications faced during pregnancies	31	36.5	64	75.3	p < 0.0001
Place of treatment for complications faced during pregnancies [n=95]					0.563
Private hospital	14	45.2	22	34.4	
Govt. hospital	14	45.2	30	46.9	
At home	1	3.2	2	3.1	
No answer	2	6.5	10	15.6	
Treatment given during the pregnancy complications [n=95]					0.61
Parents	23	74.2	46	71.9	
Husband	8	25.8	16	25.0	
No answer	0	0.0	2	3.1	
Result of first pregnancy [n=170]					0.14
Live Birth	81	95.3	74	87.1	
Abortion	3	3.5	7	8.2	
Post-natal Death	0	0.0	1	1.2	
Infant death	1	1.2	0	0.0	
Neo-natal Death	0	0.0	3	3.5	
Peri-natal Mother					
Complications faced after child birth	8	88.9	11	78.6	0.524
Place of treatment taken for pregnancy complications [n=19]					0.937
Pvt. Hospital	6	75.0	9	81.8	
Govt. Hospital	1	12.5	1	9.1	
No answer	1	12.5	1	9.1	
Treatment given for pregnancy complications					0.114
Parents	3	37.5	8	72.7	
Husband	2	25.0	2	18.2	
Other	0	0.0	1	9.1	
No answer	3	37.5	0	0.0	
Peri-natal CHILD					
Complications faced after child birth	3	60.0	30	100.0	p < 0.0001
Place of treatment taken for pregnancy complications [n=33]					0.289
At home	2	66.7	10	33.3	

Obstetric history characteristics	Control Group [Primigravida women 20-24 yrs], n = 85		Study Group [Adolescent married girl: 15 – 19 yrs], n= 85		p - value [Chi -square test]
	N	%	N	%	
Pvt. Hospital	0	0.0	13	43.3	
Govt. Hospital	0	0.0	4	13.3	
No answer	1	33.3	3	10.0	
Treatment given for pregnancy complications [n=33]					0.17
Parents	3	100.0	18	60.0	
Husband/Mother-in-law	0	0.0	12	40.0	
Post-natal Period					
Complications faced [n=28]	5	83.3	21	95.5	0.307
Place of treatment taken for pregnancy complications [n=26]					0.58
At home	3	60.0	12	57.1	
Pvt. Hospital	1	20.0	5	23.8	
Govt. Hospital	0	0.0	3	14.3	
No answer	1	20.0	1	4.8	
Treatment given for pregnancy complications [n=26]					0.219
Parents	2	40.0	10	46.2	
Husband/Mother-in-law	1	20.0	9	38.5	
No answer	2	40.0	2	15.4	
Abortion occurred	5	5.9	11	12.9	0.115
Neo-natal death occurred	0	0.0	4	4.7	0.043
Infant death occurred	2	2.4	2	2.4	1.00
Pre-mature delivery occurred	1	1.2	8	9.4	0.016

We also evaluated antenatal care characteristics by the age at first pregnancy [i.e. 15 – 19 years and 20 – 24 years]. The association of status of receiving antenatal services [ANS] during the pregnancy was not statistically associated with age at the first pregnancy [study/control group] [91.8% vs 82.4%, p = 0.152]; but provides mathematical relationship of less proportion among adolescent married girls as compared to primigravida women. Similar finding was observed for the variable - antenatal check up [92.9% vs 87.1%, p = 0.201]. However, all the respondents in both the groups received the tetanus injections and the proportion of receiving the Iron Folic Acid [IFA] tablets was less [77.6% vs 75.3%, p = 0.718] among adolescent married girls. The reason as a 'scared of side effects' for less consumption of IFA tables among adolescent married girls was borderline significantly more [5.3% vs 28.6%, p = 0.053] than primigravida women.

However, the prevalence of experiencing the complications during pregnancy for adolescent married girls was more [49.4% vs 62.4%] than their counterparts. Though, the prevalence of experiencing was more among adolescent married girls, the complication-wise prevalence was more among primigravida women – Convulsions [2.4% vs 0.0%], Bleeding [14.3% vs 13.2%], Swelling of legs [33.3% vs 28.3%], lack of blood – Anaemia [71.4% vs 56.6%], Fever [2.4% vs 0.0%], and High blood pressure [28.6% vs 17.0%] except the water came out in adolescent married girls [12.5% vs 42.9%]. The high prevalence of experiencing

complications during pregnancy is replicated in the high prevalence of referral to other hospitals anytime during the pregnancy. The proportion of referral to other hospital during pregnancy was significantly more among adolescent married girls [22.4% vs 43.5%, p = 0.003] than their counterparts.

4. Discussion

The present study suggested that early age at marriage was more among adolescent married girl and forces them to be part of adolescent pregnancy as compared to their counterparts. Being less educated, physical occupation, caste, and living in a joint family were more among adolescent married girls i.e. study group as compared their counterparts i.e. primigravida women. Surprisingly, high duration of stay in urban place i.e. Pune city was more among the adolescent married girls as compared to primigravida women.

The proportion of getting married below 18 years was significantly more among adolescent married girls than primigravida women; who are replicated in the mean age at marriage and was below the legal age of marriage. The mean age of adolescent married girl at the time marriage was significantly less than primigravida woman. Additionally, the reason for early marriage among the study group was the economic problems /poverty. The proportions of respondents stating the personal reason as 'economic problems/poverty' were more among adolescent married girls than primigravida

women. The decision about the marriage was mostly taken by the 'father' and proportion of decision maker as a 'father' was approximately similar in both the groups. More than one third of adolescent married girls were studying when got married as compared the primigravida women; which is reflected in the reasons for leaving school / college. The proportions of leaving school / college due to marriage were more among study group than control group.

Montazeri et al measured determinants of early marriage from married girls' perspectives in Iranian Setting. According to the results, family structure was one of the basic factors that propelled the girls to early marriage. Some dimensions of family structure have been recognized including the family as a system, family norms, roles, communication, the balance of power within the family system, and intergenerational aspects [6].

Blum et al suggested that early adolescent girls experience increased vulnerabilities in many settings due to restricted access to community resources, such as healthcare, education, increased physical and sexual vulnerability, which can include holding them accountable for sexual assaults they may experience, subservient social status, and early marriage [7].

Manning et al have suggested that family role is very important in early marriage among adolescent [8].

Jones et al have suggested that while prevailing norms about early marriage persist, there has been an increase in the average age of marriage, from 4-12 years in the previous two generations to 10-plus years in the current generation. Most study participants had been married before reaching 18 (the legal age for marriage), although many expressed regret at marrying early. Despite their realities, almost all participants agreed that 18-20 was the most appropriate age for a girl to marry.

We did not find any association between the age of attaining menarche and age at first pregnancy. Additionally, the use of 'physical examination' and 'urine test' for the confirmation of pregnancy was comparable between the control and study groups. The reduced weight of respondent and age at the time of delivery was significantly associated with age at first pregnancy. Interestingly, we also found birth of low birth weight babies was more common among adolescent married girls. We also found the antenatal services received were comparable in both the groups; however, adolescent girls received lesser Iron-Folic Acid tablets.

Our study also observed that complications during pregnancy and neonatal death were significantly higher in adolescent married girls during pre-natal and perinatal period. Though, the prevalence of experiencing complications was more among adolescent married girls, the complication-wise prevalence was more among primigravida women – Convulsions, Bleeding, Swelling of legs, Anaemia, Fever, and High blood pressure, except the water came out in adolescent married girls. The high prevalence of experiencing complications

during pregnancy is replicated in the high prevalence of referral to other hospitals anytime during the pregnancy. The proportion of referral to other hospital during pregnancy was significantly more among adolescent married girls than their counterparts.

Conclusion

The present study highlighted determinants of early marriage in adolescent in urban slums. Family decisions and economic status were important determinants of the early marriage. We also observed different obstetric and antenatal characteristics in adolescent married girls. The various outcomes of the study in adolescent married girls are linked with primary social determinants; hence, more focus can be given to increase awareness through school-based education, educating family member's especially decision makers, various media through vernacular medium etc.

References

[1] Igras SM, Macieira M, Murphy E, Lundgren R. Investing in very young adolescents' sexual and reproductive health. Global public health. 2014 May 28; 9(5):555-69.

[2] Gupta SD. Adolescent and youth reproductive health in India: status issues policies and programs.

[3] Umberson D, Crosnoe R, Reczek C. Social relationships and health behavior across the life course. Annual review of sociology. 2010 Aug 11; 36:139-57.

[4] Chhabra S, Singh R. Journal of Contraceptive Studies. J Reprod Heal Contracept [Internet]. 2016 [cited 2017 Nov 17]; 1(3):1–4. Available from: http://contraceptivestudies.imedpub.com/adolescents-birth-control-practices.php?aid=9525

[5] Nargund G. Declining birth rate in Developed Countries: A radical policy re-think is required. Facts, views & vision in ObGyn. 2009; 1(3):191.

[6] Montazeri S, Gharacheh M, Mohammadi N, Alaghband Rad J, Eftekhar Ardabili H. Determinants of Early Marriage from Married Girls' Perspectives in Iranian Setting: A Qualitative Study. Journal of environmental and public health. 2016 Mar 30; 2016.

[7] Blum RW, Astone NM, Decker MR, Mouli VC. A conceptual framework for early adolescence: a platform for research. International journal of adolescent medicine and health. 2014 Aug 1; 26(3):321-31.

[8] Manning WD, Cohen JA. Teenage cohabitation, marriage, and childbearing. Population research and policy review. 2015 Apr 1; 34(2):161-77.