

Original Article

A CROSS SECTIONAL STUDY TO ASSESS SOCIO ECONOMIC COMPLICATIONS OF ADOLESCENT PREGNANCY IN A METROPOLITAN CITY OF CENTRAL INDIA

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ABSTRACT

Background: Teenage pregnancy is not new to this century which is pregnancy in a female under the age of 20 (when the pregnancy ends). Half of all the teenage births occur in just 7 countries, namely Bangladesh, Brazil, Congo, Ethiopia, Nigeria, India and USA. Present study assessed the prevalence of adolescent pregnancies and correlate with their social background, also to study the possible socio-economic problems specific to pregnant adolescents.

Methods: The cross sectional study is conducted at Hukumchand hospital, District hospital and MGM medical college from 1st October 2011 to 1st September 2012. The delivered mothers were visited daily and detailed history was taken in a pre-designed, semi-open pro-forma. Study Group include Adolescent mothers (Study group) 14-20 years & Mothers 20-28 years (Control group).

Result: 12.05% of the total deliveries were teenage pregnancy. 31.74% were adolescent deliveries out of the total primi-gravida. 77 (43.75%) adolescent mothers were found in the age group of 17-19 years. In non-adolescent mothers 68 (38.64%) beneficiaries were in 21-23 years. Mean age of delivery in adolescent age was 18.45 years as compared to 22.28 years in control group. Only 41 (11.65%) beneficiaries were graduates and above. Most beneficiaries were in the Socio Economic Status Class III and IV. 101 (57.39%) adolescent mothers had alcoholic/addict fathers as compared to 54 (30.68%) in non-adolescent mothers.

Conclusion: Most of adolescent mothers had low education, rural background and belonged to low socioeconomic status with history of both pre and post marital sex discrimination.

Key Words: Adolescents, Pregnancy, Social Discrimination, Alcohol, sex discrimination

INTRODUCTION

Teenage pregnancy is not new to this century. Even in biblical times betrothals were arranged for girls at the age of 13 to 14. History says that Virgin Mary gave birth between the ages of 13-14 years.¹ Teenage pregnancy refers to pregnancy in a female under the age of 20 (when the pregnancy ends)². A pregnancy can take place at any

time after puberty, with menarche (first menstrual period) normally taking place around the ages 12 or 13, and being the stage at which a female becomes potentially fertile.² WHO has estimated that 16 million teenagers give birth annually³. This comprises 11% of all births worldwide³. Sub-Saharan Africa has the highest incidence of 50% teenager's deliveries, while US teen

pregnancy and birth rates are the second highest in the world, However, half of all the teenage births occur in just 7 countries, namely Bangladesh, Brazil, Congo, Ethiopia, Nigeria, India and USA.³ Teenage pregnancy depends on a number of societal and personal factors⁴. Teenage pregnancy rates vary between countries because of differences in levels of sexual activity, general sex education provided, access to affordable contraceptive options, early marriage and prevailing societal norms.⁴ Pregnancy and childbirth are leading causes of death in teenage girls in developing countries.⁵ In developing countries, teenage pregnancies are associated with many social issues, including lower educational levels, higher rates of poverty, and other poorer life outcomes in children of teenage mothers. Teenage pregnancy in developed countries is usually outside of marriage, but carries a social stigma in many communities and cultures.² In India, knowledge (and use) of contraceptives among adolescents is very limited⁶. In 1992–1993 no more than 5% of married women aged 13–14 years and 7.1% of married women aged 15–19 years were practising contraception⁶. This is low compared to 21% among women aged 20–24 and 61% for women aged 35–39 years.⁶ There is paucity of studies related to socio-cultural factors associated with adolescent pregnancy.

This Study principally aims to examine the prevalence of adolescent pregnancies and correlate with social background, to identify the possible social problems specific to pregnant adolescents.

METHODS

The cross sectional study is conducted at Hukumchand hospital, District hospital and MGM medical college which cater to both the rural and urban population of Indore and neighbouring districts. Time period of study spanned from 1st October 2011 to 1st September 2012. Initially, the pro-forma and data collection methodology was put to test through a pilot study and based on the feedback the pro-forma was modified and amended, and then actual work was started. This helped in making the data collection true and objective.

The delivered mothers were visited daily and detailed history narrated by each delivered mother was taken in a pre-designed, pre-tested, semi-open pro-forma so as not to miss cases, Investigator herself carried out clinical examination on the 1st day of visit. Study Group include

Adolescent mothers (Study group) 14-20 years & Mothers 20-28 years (Control group). Adolescent mothers and to match same number of controls (Only primi parous) delivered in the selected hospitals from 1st December 2011 to 31st May 2012, irrespective of gestational period (preterm, full term or post-dated and post term) having still births, twins or spontaneous abortions are included in the study. Pre-designed, semi open type questionnaire developed and interview with the pregnant women and her family members and ASHA (where ever necessary was done). The information collected from each questionnaire was then entered in the computerised format. Written informed consent was obtained from participant and also study was approved from institutional ethical committee. To facilitate data entry an exact format as the questionnaire with drop down menu is prepared. Simple software in Microsoft Access is then used to transfer the information into appropriate master table and sub-tables. Analysis was carried out using appropriate statistical methods. Before finalizing data for final presentation, statistical tests for significance of data outcome are applied for objective reasoning and results.

RESULTS

There were three hospitals under study i.e. District Hospital (Dhar Road, Indore) 158 (44.89%), Hukumchand Hospital (Siyaganj, Indore) 50 (16.76%) and Mahatma Gandhi Medical College (A B Road, Near Shivaji Statue, Indore) 135 (38.35%). 77 (43.75%) adolescent mothers were found in the age group of 17-19 years, In non-adolescent mothers 68 (38.64%) beneficiaries were in 21-23 years.

It is observed that out of the total 4 (1.14%) unmarried mothers, the proportion of adolescent was more 3 (1.70%) than control group 1 (0.57%). 73.30% Hindus and 25% Muslims delivered in government hospitals. 221 (62.78%) mothers were from joint family whereas 131 (37.27%) were from nuclear family. This is highly skewed in favor of housewives as there were about 275 (78.13%) of mothers from home maker category.

This Study indicates better educational status of mothers who have completed 20 years of their age. Out of total mothers' maximum number of mothers, i.e. 217 (61.65%) mothers had education up to middle class. Only 41 (11.65%) beneficiaries were graduates and above. 64 (63.36%) had men-

arche at the age of 13 & 14 in rural area as compared to only 51.39% in urban area.

Out of the total, 101 (28.69%) mothers were from rural area whereas 251 (71.31%) were from urban and semi-urban areas. If the age of marriage in rural area is considered, 43(42.57%) mothers got married between 15-17 years of age as compared to 14.74% in urban area. Similarly 9.90% in rural area were married before 15 years in contrast to 1.99% in urban area.

The study shows the age wise distribution of mothers according to adverse Social factors 101 (57.39%) adolescent mothers had alcoholic/addict fathers as compared to 54 (30.68%) in non-adolescent mothers. Out of the total 352 cases 155 (44.03%) beneficiaries had their fathers as

alcoholic/addict. Even the proportion of alcoholic/addict husbands is relatively higher i.e. 59 (33.52%) in adolescents than control group 52 (29.55%).

In adolescent age group 69(39.20%) were discriminated against 47 (26.70%) for food. Priority was given to boys over them in items such as butter, milk & non-vegetarian food; some told that their mother and they had food after male members had eaten the meals. Compared to 68 (38.64%) from Non-adolescent 99(56.25%) adolescent complained that, they wanted to study, but the home environment did not permit them. There was not much difference seen in behaviour between the two groups i.e. 30(17.05%) v/s 29(16.48%).

Table 1: Overview of deliveries from Hospital records

Name of Centre	Total No. of Delivery	Primi Deliveries		Adolescent Deliveries			Non-Adolescent	
		No. of Primi	% to Total	No. of Adoles- cent	% to Total	% to Primi	No. of Non-Ado	% to Total
District Hospital	1251	501	40.05%	151	12.07%	30.14%	350	27.98%
Medical College	1539	554	36.00%	182	11.83%	32.85%	372	24.17%
Hukumchand	405	158	39.01%	52	12.84%	32.91%	106	26.17%
Total	3195	1213	37.97%	385	12.05%	31.74%	828	25.92%

Note: An effort has been made to cover all cases reporting to these Hospitals but still some cases could not be interviewed and hence not included in my study.

Table 2: Distribution of mothers according Different Parameters

Social profile	< 20 Years (N=176)		≥ 20 Years (N=176)		Total	
	No.	%	No.	%	No.	%
Marital Status						
Unmarried	3	(1.70%	1	0.57%	4	1.14%
Married	173	(98.30%	172	97.73%	345	98.01%
Widow	0	(0.00%	2	1.14%	2	0.57%
Separated	0	0.00%	1	0.57%	1	0.28%
Residential Status						
Rural	73	72.28%	28	27.72%	101	100.00%
Urban	103	41.04%	148	58.96%	251	100.00%
Religion						
Hindu	109	42.25%	149	57.75%	258	73.30%
Muslim	67	76.14%	21	23.86%	88	25.00%
Sikh	0	0.00%	4	100.00%	4	1.14%
Christian	0	0.00%	2	100.00%	2	0.57%
Caste						
SC	22	43.14%	29	56.86%	51	14.49%
ST	17	40.48%	25	59.52%	42	11.93%
OBC	74	48.37%	79	51.63%	153	43.47%
General	44	53.66%	38	46.34%	82	23.30%
Not Available	19	79.17%	5	20.83%	24	6.82%
Family Type						
Joint	70	31.67%	151	68.33%	221	62.78%
Nuclear	31	23.66%	100	76.34%	131	37.22%

Table 3: Distribution of mothers according Different Parameters

Socio-economic profile	< 20 Years (N=176)		≥ 20 Years (N=176)		Total	
	No	%	No	%	No	%
Occupation						
Housewife	133	48.36%	142	51.64%	275	78.13%
Farmer	0	0.00%	2	100.00%	2	0.57%
Agricultural Labourer	7	63.64%	4	36.36%	11	3.13%
Labourer	19	70.37%	8	29.63%	27	7.67%
Service	2	11.76%	15	88.24%	17	4.83%
Student	5	100.00%	0	0.00%	5	1.42%
Self Employed	10	66.67%	5	33.33%	15	4.26%
Education						
Illiterate	31	17.61%	7	3.98%	38	10.80%
Primary	57	32.39%	16	9.09%	73	20.74%
Middle	65	36.93%	41	23.30%	106	30.11%
High School	17	9.66%	33	18.75%	50	14.20%
Secondary	6	3.41%	38	21.59%	44	12.50%
Graduate	0	0.00%	37	21.02%	37	10.51%
Postgraduate	0	0.00%	4	2.27%	4	1.14%
Socioeconomic Status						
Class I	0	0.00%	4	2.27%	4	1.14%
Class II	5	2.84%	31	17.61%	36	10.23%
Class III	53	30.11%	61	34.66%	114	32.39%
Class IV	70	39.77%	61	34.66%	131	37.22%
Class V	48	27.27%	19	10.80%	67	19.03%

Table 4: Distribution of mothers according Different Parameters

	Rural (N= 101)		Urban (N= 251)		Total	
	No	%	No	%	No	%
Age of Menarche						
11	1	0.99%	12	4.78%	13	3.69%
12	13	12.87%	77	30.68%	90	25.57%
13	32	31.68%	86	34.26%	118	33.52%
14	32	31.68%	43	17.13%	75	21.31%
15	11	10.89%	21	8.37%	32	9.09%
16	8	7.92%	1	0.40%	9	2.56%
Not Known	4	3.96%	11	4.38%	15	4.26%
Age of Marriage						
Unmarried	2	1.98%	2	0.80%	4	1.14%
≤15 Years	10	9.90%	5	1.99%	15	4.26%
15 - 17 Years	43	42.57%	37	14.74%	80	22.73%
18 - 20 Years	39	38.61%	120	47.81%	159	45.17%
Above 20 Years	7	6.93%	87	34.66%	94	26.70%

Table 5: Distribution of mothers according Different Parameters

	< 20 Years		≥ 20 Years		Total	
	No	%	No	%	No	%
Social Factors						
Alcoholic Father	101	57.39%	54	30.68%	155	44.03%
Alcoholic Husband	59	33.52%	52	29.55%	111	31.53%
Poverty	48	27.27%	19	10.80%	67	19.03%
Separated Parents	19	10.80%	8	4.55%	27	7.67%
Sex Discrimination Before Marriage						
Food	69	39.20%	47	26.70%	116	32.95%
Education/Opportunities	99	56.25%	68	38.64%	167	47.44%
Behaviour	30	17.05%	29	16.48%	59	16.76%
Others	79	44.89%	44	25.00%	123	34.94%
Social Discrimination After Marriage						
Food	118	68.21%	106	60.57%	224	64.37%
Behaviour	149	86.13%	135	77.14%	284	81.61%
Others	80	46.24%	45	25.71%	125	35.92%

Study shows social discrimination faced by beneficiaries through their in-laws home or with husband after marriage. The responses are single or multiple 118(68.21%) adolescent's v/s 106(60.57%) control told that they were deprived of equal status at home. They did not eat with the family, in spite of pregnancy they did not get special food or supplements, some told that discrimination was not only in the quality but also quantity of food eaten by them.

Maximum No. of beneficiaries from the rural area had Radio as their most preferred option (48.54%) followed by T.V. (39.18%) then wall advertisements, Banners & holdings. Also in the urban area T.V. was the main source of information is (38.84%) followed closely by Radio (30.99%) & newspaper (22.93%). The numbers of multiple responses for media exposure obtained in urban area were much high i.e. 484 compared to 171 in rural area.

DISCUSSION

The data was collected from the hospital Records of District hospital, MGM Medical College and Hukumchand hospital every month during the period of study and it was found that the percentage of teenage pregnancy was 12.05% of the total deliveries. The percentage of adolescent deliveries out of the total primi-gravida was 31.74%. The present study is similar to that of (NFHS-3)⁶ which shows the proportion of women aged 15-19 who have begun childbearing was more than twice as high in rural areas (19 per cent) as was in urban areas (9 per cent).

Mean age of delivery in adolescent age was 18.45 years as compared to 22.28 years in control group. This study is similar to the studies carried out by Reddi Rani P. et al⁷, Pondicherry reported 11.8% of teenage pregnancies. Complications of pregnancy and childbirth are the leading cause of mortality among girls aged 15-19 years in developing countries⁸. A study has found that, preterm delivery and maternal perinatal complications most likely to contribute to the risk of perinatal death in poor and disadvantaged populations, especially for deliveries occurring outside hospitals or health care facilities in developing countries⁹.

It is observed that out of the total 4 (1.14%) unmarried mothers, the proportion of adolescent was more 3 (1.70%) than control group 1 (0.57%). The above study findings are similar Nitwe Madhuri T. et al¹⁰ and Horon Isabelle L. et al¹¹.

It was found that more number of mothers from rural background were adolescent 73 (72.28%) compared to only 28 (27.72%) non adolescent mothers. In urban area the proportion of adolescent (41.04%) to non-adolescent (58.96%) has a difference of 17.92% which is much less compared to 44.56% difference in rural population. Also according to NFHS III⁶ the proportion of women age 15-19 who have begun childbearing is more than twice as high in rural areas (19 per cent) compared to urban area (9 per cent). The study is not parallel to the findings by Sarkar C.S. et al¹² in Medical College hospital, Kolkatta who revealed that out of total 4698 teenage mothers 51.3% were from rural area, 28.4% from semi urban area and remaining from urban area.

In study 73.30% Hindus and 25% Muslims delivered in government hospitals. The percentage of Sikh and Christian was only 1.14 % and 0.57% respectively. The above study is similar to that of NFHS-3⁶ which shows the level of teenage motherhood and pregnancy is higher for Hindu and Muslim women aged 15-19 (16 per cent) than for Buddhists/Neo-Buddhists (14 per cent), Christians (9 per cent), Sikhs (5 per cent).

When occupation of mothers was studied it was found that proportion of adolescent mothers working as agricultural laborers 7 (63.64%), laborer 19 (70.37%), self-employed 10 (66.67%) were more as compared to control i.e. 4 (36.36%), 8 (29.63%) and 5 (33.33%) respectively. The above findings were similar to study of Nandini Gupta et al¹³ where women less than 20 years were more likely to be unemployed (56.4% compared to control 8.5%) book late as ANC case.

In this, maximum number of beneficiaries were in the Socio Economic Status Class III and IV i.e. 114 (32.39%) and 131 (37.22%) whereas only 11.37% fell in Socio Economic Status Class I & II, clubbed together. This study is similar to Reddi Rani P. et al⁷ who conducted a hospital based study at Pondicherry and observed that 77% adolescent mothers were from low Socio Economic Status. Similar findings were also observed by Mehra S et al¹⁴.

The average age of menarche in rural areas was 13.6 years as compared to 12.9 years in urban mothers. This study is similar to the study carried out by National Nutrition monitoring Bureau Surveys¹⁵ Hyderabad has reported the age at menarche between 12.4 to 13.4 years.

The average of age at marriage in this study is 17 years in rural area and 19.5 years in urban area.

These findings are in conformity with Pratinidhi et al¹⁶ who observed that the mean age at marriage was 17 years and 78.4% girls were married below the age of 18 years, of whom 4.8% were below the age of 15 years. However, Singh S. and Samara R.¹⁷ observed that in Asia percentage of marriage before 20 years among women aged 20-24 years was 19.8%. Similarly Ratib A. Mesleh et al¹⁸ observed in his study in Riyadh Armed Forces Hospital, Saudi Arabia that the age distribution of the adolescent mothers less than 15 years was 4%, less than 16 years was 6.5%, less than 18 years was 18% and less than 19 years was 46%.

The maximum number of respondents i.e. 149(86.13% adolescent v/s 135(77.14%) control group faced adverse behaviour at home. The present study is in conformity with (NFHS-3)⁶ where reason most commonly agreed to by women that justifies a husband beating his wife is 'if she shows disrespect for her in-laws' (41 percent), followed by 'if she neglects the house or children' (35 percent). The reasons least agreed with are 'if she refuses to have sex with him' (14 percent), followed by 'if she doesn't cook food properly' (20 percent).

There could be recall bias on some factors like age of menarche, exact mother's date of birth. An attempt was made to interview maximum number of adolescent mothers, but there have been some uncovered mothers in the study. Hospital data has its own limitations and can never be better than field study but the topic of research was such that field study was not possible with constraint of practicality and time. Some mothers refused to be part of the study and did not cooperate in questionnaire.

The Health education must be imparted to the general population, which must include creating awareness about fundamental rights of women and the risk associated with teenage, marriage and pregnancy and the risk associated with teenage pregnancy with the help of mass media. Teachers play a crucial role in the development and education of adolescents. However, life skills that could enable them to respond properly to their life situations are found to be sorely lacking among adolescent girls. Adolescent need to be reassured that physical, mental and emotional change is a normal process of development. The misbeliefs and misconception about sexual attributes can be removed, by proper sex education.

REFERENCES

1. Programming for Adolescent Health and Development. WHO Technical Report Series 886; 1999.p.1-217.
2. Teenage pregnancy Available from: En. Wikipedia.org/wiki/teenagepregnancy Accessed May 10 January 2012
3. Roza olyai, Dilip k.Dutta : Recent advances in adolescent health. FOGSI , :Jaypee publication, 2011 Chp 12, - p. 92-96.
4. PE Treffers Teenage pregnancy, a worldwide problem. Treffers 2003 Nov 22;vol147(47):p 2320-5.
5. Makinson C: "The health consequences of teenage fertility" Family Planning Perspectives Published by: Guttmacher Institute 1985 May - Jun., Vol. 17, No. 3 p. 132-139.
6. National family health survey, Ministry of Health and Family Welfare Government of India NFHS III (2005-06). Available at :http://www.nfhsindia.org accessed on 12 march 2012
7. Reddi Rani P. et al: Adolescent pregnancy. J Obstet Gynecol India. 1992. Vol No. 6, p. 764-67.
8. Mayor S. Pregnancy and childbirth are leading causes of death in teenage girls in developing countries. BMJ 2004; 328:1152.
9. Ngoc NTN, Merialdi M, Abdel-Aleem, H, Carrroli G, et al. Causes of still birth and early neonatal deaths: data from 7993 pregnancies in six developing countries. Bulletin of the WHO 2006; 84:699-705.
10. Nitwe Madhuri T et al: Teenage pregnancy - A health hazard. J Obstet Gynecol India. 1989. Vol. 39, (3):p 303-05.
11. Horon Isabelle, L. et al: Birth weight among infants born to adolescent and young adult women. Am J Obstet Gynecol 1989.Vol. 146, No. 4:p 444-49.
12. Sarkar, C.S. et al: Outcome of teenage pregnancy and labour - a retrospective study. J Indian Med Assoc. 1991.Vol.89, (7):p 197-99.
13. Nandini Gupta et al. Teenage pregnancies-Obstetric characteristics and outcome, Euro.J obst. & Gyne. & reproductive biology 2008 vol.137; p.165-171.
14. Mehra S, Agrawal D, Indian Paediatrics Environmental health project - Special Article Series 2004 Feb.17 Vol. 41; p. 137-145.
15. National nutrition monitoring bureau surveys: Trends in nutrition. Nutrition News NIN. 1991. Vol. 12 No. 3.
16. Pratinidhi, et al: Proceeding of national workshop on adolescence - Need for critical appraisal. Edited by Rao S. and Khande A. 1992. p. 172-77.
17. Singh S., Samara R: Early marriage among women in developing countries. In: Fam Plann Perspect. 1996. Vol. 22,(4):p 148-75.
18. Mesleh, R.A., Teenage pregnancy. Saudi Med J. 2001 22(10):864-67