

DOI: <http://dx.doi.org/10.18203/2320-1770.ijrcog20185433>

Original Research Article

Effect of maternal education on antenatal care utilization, maternal and perinatal outcome in a tertiary care hospital

Isha Chopra^{1*}, Sunil K. Juneja¹, Sarit Sharma²

¹Department of Obstetrics and Gynecology, ²Department of Social and Preventive Medicine, Dayanand Medical College and Hospital, Ludhiana (DMCH), Punjab, India

Received: 12 October 2018

Accepted: 14 December 2018

***Correspondence:**

Dr. Isha Chopra,

E-mail: dr.isha.chopra@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Antenatal Care (ANC) utilization facility is available but poorly utilized because of many factors which play indirect role in inadequate utilization of antenatal care facility: low social status of women in the society, less opportunity for basic education, less ability to make decisions. Therefore, the present study is an attempt to study the effect of maternal education on antenatal care utilization, maternal and perinatal outcome in a tertiary care hospital.

Methods: A prospective study was carried out on 525 cases delivered during period of one year at Dayanand Medical College and Hospital, Ludhiana, Punjab, India; a tertiary care hospital catering both urban and rural population. All cases were categorized into two groups: booked and unbooked. The age, parity and education of each patient in booked and unbooked cases was noted. Further, its impact on antenatal care utilization, maternal and perinatal outcome was studied.

Results: On studying education pattern, among illiterate subjects 50% were booked and 50% were unbooked; For graduate and above were 80.6% and 19.4% respectively. Among mothers who were illiterate 90.9% had low birth weight babies and 13.6% had stillborn. Among those graduates and above 38.7% had low birth weight babies, 1.5% stillborn and 1.2% neonatal deaths.

Conclusions: The educational status of the women came out as a significantly important variable and predictor of perinatal outcome. Hence, whole hearted efforts should be directed in educating women population and also improving health care facilities in rural areas to provide early referral to higher centers.

Keywords: Booked and unbooked, Maternal education, Perinatal outcome

INTRODUCTION

For centuries, care for child birth and young children was regarded as a domestic affair. In 20th century, the health of mother and children had become a public health priority. In the opening of 21st century, the Millennium Development Goals have given special priority to health and well-being of women, mother and children.¹ As per the latest report on the trends in maternal mortality between 1990 and 2015, India accounts for almost 15% of global maternal mortality burden with close to 45,000

deaths in 2015.² Most of the maternal deaths can be prevented, but all women need access to antenatal care (ANC) during pregnancy and childbirth.³ The progress of any nation depends on the improvement of maternal and child health and this consideration lead to the formation of special maternal and child health care services all over the world. In India, most of the population has poor knowledge of antenatal and intranatal care available to them. Antenatal Care (ANC) utilization facility is available but poorly utilized because of many factors which play indirect role in inadequate utilization of

antenatal care facility: low social status of women in the society, less opportunity for basic education, less ability to make decisions, limited access to economic resources. All these factors have certainly added to the increased incidence of maternal and perinatal morbidity and mortality. Maternal deaths and pregnancy complications can be prevented if pregnant women have access to good quality antenatal, intranatal and postnatal care. Therefore, the present study is an attempt to study the effect of maternal education on antenatal care utilization, maternal and perinatal outcomes in a tertiary care hospital.

METHODS

The prospective study was conducted on all women admitted in labour room of Department of Obstetrics and Gynecology, Dayanand Medical College and Hospital, Ludhiana (DMCH) which is a tertiary care hospital for delivery over a period of one year from 1st January 2014 to 31st December 2014. All delivered women were categorized into two groups: unbooked and booked.

Inclusion criteria

- All patients delivering in labour room with >26 weeks of gestation irrespective of age, parity, maternal complications.

Exclusion criteria

- Patients with gestational age <26 weeks.
- Post-partum cases.

All delivered women formed the study group and every woman was interviewed in detail as per proforma about their age, parity, residential status (urban/rural), socioeconomic status, education, occupation, menstrual history, obstetrical history and about the antenatal care they had received in the form of visits, immunization, maternal complications and treatment taken. This was followed by a detailed examination. Maternal variables were noted and their effect on maternal outcome in terms of period of gestation at delivery, mode of delivery and maternal complications was recorded. Also, effect of these variables on perinatal outcome in terms of live births /stillborn was analyzed; live births were further evaluated in terms of birth weight, Apgar score at birth (1 and 5 minutes), Baby with mother/ nursery and neonatal complications. The results were analyzed using percentages and chi-square test. In chi-square test both parametric and non-parametric types were used.

RESULTS

There were total of 525 patients. Of whom 71% were booked in DMCH and 29% were not enrolled for Antenatal Care Utilization (ANC) in DMCH. In present study, there was no maternal mortality seen during the study period.

Table 1: Association of maternal education with antenatal care utilization.

Education	Booked (%)	Unbooked (%)	Total
Illiterate	7 (50.0)	7 (50.0)	14
Primary	5 (45.5)	6 (54.5)	11
Middle	4 (28.6)	10 (71.4)	14
Senior secondary	100 (59.9)	67 (40.1)	167
Graduate/ Post graduate	257 (80.6)	62 (19.4)	319
Total	373	152	525

$$\chi^2 = 42.96, df = 4, p < 0.001$$

Among illiterate subjects, 50% were booked and 50% were unbooked, corresponding proportions for those who studied till middle standard were 28.6% and 71.4% and similarly for graduate and above were 80.6% and 19.4% as depicted in Table 1.

Table 2: Maternal outcome with respect to maternal education.

Education	Maternal complications (%)		Total
	No	Yes	
Illiterate	12 (85.7)	2 (14.3)	14
Primary	11 (100.0)	0 (0.0)	11
Middle	12 (85.7)	2 (14.3)	14
Senior secondary	163 (97.6)	4 (2.4)	167
Graduate/ Post graduate	314 (98.4)	5 (1.6)	319
Total	512	13	525

$$\chi^2 = 17.54, df = 4, p = 0.002$$

This distribution of antenatal care utilization as per education status of the mother was found to be highly significant. Among illiterate 14.3% had complications, corresponding proportion for those studied till middle standard was 14.3% and similarly for graduate and above was 1.6%. There was a statistically significant difference in maternal complications based on her education as depicted in Table 2.

Table 3: Babies outcome with respect to maternal education (n=572).

Maternal education	No. of babies	LBW (%) [†]	Stillborn (%) [#]	Neonatal death (%)
Illiterate	22	20 (90.9)	3 (13.6)	0 (0.0)
Primary	13	11 (84.6)	0 (0.0)	1 (7.7)
Middle	19	15 (78.9)	0 (0.0)	1 (5.3)
Senior secondary	182	110 (60.4)	10 (5.5)	2 (1.1)
Graduate/ Post graduate	336	130 (38.7)	5 (1.5)	4 (1.2)

$$^{\dagger}\chi^2=52.45, df=4, p=0.000, ^{\#}\chi^2=15.30, df=4, p=0.004$$

Perinatal outcome summarized in Table 3. Among mothers who were illiterate, 90.9% had low birth weight babies and 13.6% had stillborn. Among those educated up to senior secondary level, 60.4% had low birth weight babies, 5.5% stillborn and 1.1% neonatal deaths. Among those graduates and above 38.7% had low birth weight babies, 1.5% stillborn and 1.2% had neonatal death.

DISCUSSION

Among illiterate subjects in the current study, 50% were booked and 50% were unbooked, corresponding proportions for those who studied till middle standard were 28.6% and 71.4% and similarly for graduate and above were 80.6% and 19.4% respectively. This education wise distribution of subjects regarding antenatal care utilization pattern was found to be highly significant statistically. Our results were supported by studies of Govindasamy et al, Owolabi et al, Sohag et al, Gupta et al, Gedefaw et al, Alam et al, Wablembo et al, Rahman et al, Sabiti et al, all of them concluded that lower education status associated with low antenatal care utilization.⁴⁻¹² Among illiterate 14.3% had complications, corresponding proportion for those studied till middle standard was 14.3% and similarly for graduate and above was 1.6%. There was a statistically significant difference in maternal complications based on her education similar findings by Tuncalp et al and Huda FA et al.^{13,14}

Among those who were illiterate 90.9% had low birth weight babies and 13.6% had stillborn. Among those educated up to senior secondary level 60.4% had low birth weight babies, 5.5% had stillborn and 1.1% had neonatal deaths. Among those educated up to graduate and above, 38.7% had low birth weight babies, 1.5% had stillborn and 1.2% had neonatal deaths. These results were consistent with studies of Joshi et al, Luo et al, and Shah et al, all of them stated that illiteracy was associated with low birth weight of babies.¹⁵⁻¹⁷ Luo et al concluded that illiteracy was associated with stillborn, low birth weight and preterm babies' similar findings were found in present study.¹⁶

CONCLUSION

To conclude if women remain disadvantaged in their societies, maternal and new born health will suffer as well. But if we can empower women with the tools to take control of their lives, we can create a more supportive environment for women and children alike. Empowerment begins with education, the best development investment we can make by ensuring that girls as well as boys are able to attend primary school, enable women to read and write and provide them with public health education. Educated girls are also more likely to delay their marriages and so less likely to get pregnant while very young, reducing the risk of dying during childbirth while they are still children themselves. As girls continue their education, their earning potential

increases, enabling them to break the bonds of poverty which is too often passed down through the generations. Put simply, changing the trajectory for girls can change the course of the future. And if these girls grow into women who choose to become mothers themselves, they will view pregnancy and childbirth as something to celebrate, not fear. Therefore, appropriate strategies should be taken to promote female literacy as educational attainment has a strong association with the age of marriage. With the increase in educational achievement, age at marriage should be increased. The present study is important in a way that it substantially highlights the enormous need of female literacy to improve the utilization of antenatal care during pregnancy.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. MDG-Millennium Development Goals Report 2013 United Nations New York. Available at: www.un.org/millenniumgoals.
2. WHO. UNICEF. UNFPA. World Bank. United Nation Population Division. Trends in Maternal Mortality 1990 to 2015: Estimates by WHO, UNICEF, World Bank, UNFPA and United Nations Population Division. Geneva: WHO; 2015.
3. Acharya AS, Kaur R, Prasuna JG, Rasheed N. Making pregnancy safer-birth preparedness and complication readiness study among antenatal women attendees of a primary health center, Delhi. *Ind J Commun Medi: Offic Public Ind Assoc Prevent Soc Med.* 2015;40(2):127-34.
4. Govindasamy P, Ramesh BM. Maternal Education and utilisation of maternal and child health services in India; NFHS Subject Report. 1997;5.
5. Owolabi AT, Fatusi AO, Kuti O, Adeyemi A, Faturoti SO, Obiajuwa PO. Maternal complications and perinatal outcomes in booked and unbooked Nigerian mothers. *Singapore Med J.* 2008;49(7):526-31.
6. Sohag A, Memon S, Bhatti M, Azeem MA. Factors affecting utilization of antenatal care: The opinion of pregnant women. *Pak J Physiol.* 2013;9(1):17-9.
7. Gupta A, Chhabra P, Kannan A, Sharma G. Determinants of utilization pattern of antenatal and delivery services in an urbanized village of East Delhi. *Indian J Prev Soc Med.* 2010;41:240-5.
8. Gedefaw M, Mucbe B, Aychiluhem M. Current status of antenatal care utilization in the context of data conflict: the case of Dembecha District, Northwes Ethiop. *Open J Epidemiol.* 2014;4(4):208-16.
9. Alam AY, Qureshi AA, Adil MM, Ali H. Factors affecting utilization of antenatal care among women in urban slum areas of Islamabad. *Raw Med J.* 2004;29(2):71-5.

10. Wablembo SM, Doctor HV. The influence of age cohort differentials on antenatal care attendance and supervised deliveries in Uganda. *J Nurs Educ Pract.* 2013;3(11):101-10.
11. Rahman KMM. Determinants of maternal health care utilization in Bangladesh. *Res J Appl Sci.* 2009;4:113-9.
12. Kalule-Sabiti I, Amoteng AY, Ngake M. The Effect of Socio-demographic Factors on the Utilization of Maternal Health Care Services in Uganda. *Afric Popul Stud.* 2014;28(1): 515-25.
13. Tunçalp Ö, Souza JP, Hindin MJ, Santos CA, Oliveira TH, Vogel JP, et al. Education and severe maternal outcomes in developing countries: a multicountry cross-sectional survey. *BJOG: Int J Obstet Gynaecol.* 2014;121:57-65.
14. Huda FA, Ahmed A, Dasgupta SK, Jahan M, Ferdous J, Koblinsky M, et al. Profile of maternal and foetal complications during labour and delivery among women giving birth in hospitals in Matlab and Chandpur, Bangladesh. *J Heal Pop Nutr.* 2012;30(2):131-42.
15. Joshi HS, Srivastava PC, Agnihotri AK, Joshi MC, Chandra S, Mahajan V. Risk factors for Low Birth Weight (LBW) babies and its medicolegal significance. *J Indian Acad Forensic Med.* 2010;32(3):212-5.
16. Luo ZC, Wilkins R, Kramer MS. Effect of neighbourhood income and Maternal Education on Birth outcomes: A Population based study. *Canadian Med Assoc J.* 2006;174(10):1415-20.
17. Shah UP, Parikh SB, Bala DV. Effect of different maternal factors on birth weight in the Odhav ward of Ahmadabad Municipal Corporation-a case control study. *Health Line.* 2013;4(1):58-62.

Cite this article as: Chopra I, Juneja SK, Sharma S. Effect of maternal education on antenatal care utilization, maternal and perinatal outcome in a tertiary care hospital. *Int J Reprod Contracept Obstet Gynecol* 2019;8:247-50.