

Review on Pregnant Women Adherence Level to ANC and Its Effect on Perinatal Outcome

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ABSTRACT

Antenatal care or prenatal care is the service provided to pregnant women in order to ensure the best health conditions for the women and the fetus during pregnancy. ANC is considered as a backbone of obstetrical services of any health of pregnant women and is the way in which maternal and fetal complications are detected and managed. The purpose of the antenatal care is to monitor, improve the wellbeing of the mother and fetus. The prevention, monitoring, and early detection, also the treatment of maternal health problems, which enhances maternal satisfaction, and healthcare utilization depends on the quality of antenatal care. Maternal deaths can be reduced if women can approach quality medical care during pregnancy, childbirth, and postpartum. This can be reduced by quality prenatal care that WHO recommended for all pregnant women to have four consecutive ANC visits for low risk pregnant women²⁵ reduces poor birth outcomes through increasing the utilization of institutional delivery⁴. There is a relationship between ANC and good perinatal outcomes; although it is not clear whether this is a causal relationship as attending ANC may be a marker for women who take good care of themselves generally. The results point out several avenues for further research and action to increase the number of women receiving ANC. Interventions to promote ANC may include preparing community health workers to promote

Keywords: Antenatal care, peri natal outcome

INTRODUCTION

Antenatal care (ANC) is defined as the care provided by health-care professionals to pregnant women in order to ensure the best health conditions for both mother and baby during pregnancy¹. Antenatal care or prenatal care is the service provided to pregnant women in order to ensure the best health conditions for the women and the fetus during pregnancy⁴. ANC is considered as a backbone of obstetrical services of any health of pregnant women and is the way in which maternal and fetal complications are detected and managed. It highlights the care of antenatal mothers as an important element in maternal healthcare as appropriate care will lead to successful pregnancy outcome and healthy babies. Safe motherhood by providing good antenatal care (ANC) is very important to reduce maternal mortality ratio and infant mortality rate and to achieve millennium development goals².

The purpose of the antenatal care is to monitor, improve the wellbeing of the mother and fetus. The prevention, monitoring, and early detection, also the treatment of maternal health problems, which enhances maternal satisfaction and healthcare utilization depends on the quality of antenatal care⁴.

Maternal deaths can be reduced if women can approach quality medical care during pregnancy, childbirth, and postpartum. This can be reduced by quality

prenatal care that reduces poor birth outcomes through increasing the utilization of institutional delivery⁴. Throughout the world, complications during pregnancy, childbirth, and the postnatal period have been the leading causes of death and disability among reproductive age women⁶ WHO recommended for all pregnant women to have four consecutive ANC visits for low risk pregnant women². The World Health Organization recommends risk-oriented strategy that includes: (i) routine care to all women, (ii) additional care for women with severe diseases and complications, (iii) specialized obstetrical and neonatal care for women with severe diseases and complications. Antenatal care is perturbed with adequate care in order to be effective. Measurement for adequacy of antenatal care often applies indexes that estimate initiation of care and number of visits⁷.

Antenatal care might reduce maternal morbidity and mortality directly through detecting and treating of pregnancy related or inter current illness or indirectly through the detection of women at increased risk of complications of delivery and ensuring that they deliver in a suitably equipped facility⁴. Getting good care before, during, and after pregnancy is very important for growth and development of baby as well as it will keep mother also healthy³.

Folic acid is a pregnancy superhero. Taking folic acid before and during pregnancy can help prevent birth defects. Though not all birth defects can be avoided, prenatal care and awareness of past or current conditions can help with prevention⁸.

Tetanus is a highly fatal, non-communicable, toxin-mediated disease caused by clostridium tetanus bacteria. Women and fetus are at high risk of acquiring tetanus related to the birthing process. Globally, tetanus toxoid (TT) immunization of the mother is one of the preventive strategies of maternal and neonatal tetanus at birth. Antenatal visits are

positively associated with uptake of tetanus toxoid⁹.

Nutrition is important in pregnancy. Nutrition is important in pregnancy. A balanced diet will also lower the risks of anemia as well as other annoying pregnancy symptoms such as fatigue and morning sickness. There is a strong association between the utilization of ANC and prenatal diet, which improves the child health outcomes¹⁰.

OBJECTIVE

Assessing pregnant women adherence level to antenatal care visits gives a relation about the ANC and its effect on perinatal outcome.

METHODS

We found about 57,900 articles with antenatal terms on PubMed and Google Scholar search engine. Out of those 120 have been reviewed and from that 25 articles included in the study. We also gathered the database from UNICEF GLOBAL DATABASES and analyzed the data to know the projection of stillbirth in India and other countries.

RESULT AND DISCUSSION

In developing countries, the most leading cause of maternal mortality and morbidity among the women whose age ranges from 15 to 49 are the complications that happen during pregnancy and childbirth. World Health Organization estimates that more than half of the million women lose their lives in the process of reproduction worldwide every year^{16,17}.

Haftu *et al*, did study in Tigray to find out the relation between ANC and perinatal outcome entitled on “Pregnant women adherence level to antenatal care visit, and its effect on perinatal outcome among mothers in Northern region of Ethiopia, Public Health institutions”. There is a positive importance of antenatal care services on perinatal outcome, so giving importance to regulate the gap with women adherence to antenatal visit and its effect on

perinatal outcome is timely and significant as woman with single visit and four visits will not have similar complications. The study also shows that incidence of neonatal complication is higher among the women's neonate with incomplete adherence to antenatal visit. Occurrences of still birth among women with incomplete adherence are four-fold of the women with complete adherence to antenatal visit¹⁸.

According to Yeoh PL *et al*, Risk assessment is a key component of antenatal care and has demonstrated benefits in promoting improved outcome. Disproportionate utilization of antenatal care according to risk level of pregnancy indicates the needs for better scheduling of care. The risk aligned approach often results in a tendency to focus on the risk conditions of the women. Training interventions are endorsed to improve communication and to help healthcare professionals understand the priorities of the women. Further studies are required to estimate the reason for disproportionate utilisation of antenatal care according to risk level and how delivery of antenatal advice can be improved, reviewing both user and provider perspectives⁷.

Mistry R *et al* did study in rural India to investigate whether women's autonomy was associated with the use of adequate prenatal, delivery and postnatal care titled "Women's autonomy and pregnancy care in rural India: A contextual analysis". The findings designate that women's autonomy was associated with greater use of pregnancy care services, particularly prenatal and postnatal care. The outcome of women's autonomy on pregnancy care use assorted according to the region of India scrutinized (North, East and south) such that it was most consistently correlated with pregnancy care use in south India, which also had the high grade of self-reported women's autonomy. The results concerning village level factors indicates that public sector investment in rural economic development, primary health care access, social cohesion and basic

infrastructure such as electrification and paved roads were associated with pregnancy care use¹⁹.

Despite of illiteracy and low socio-economic status contribute to poor ANC adherence. There have many studies which showed favorable effect of ANC on perinatal outcome including reducing risk of postpartum hemorrhage (PPH), low birth weight, preterm birth and perinatal death¹⁸. The timing of first ANC and total number of visits during pregnancy, and not attending the recommend ANC services may lead to adverse perinatal outcomes²⁰.

Additionally, factors associated to place of residence and socioeconomic status may account for variations in use of maternal health care. These factors include women's age, ethnicity, education, religion, culture, clinical need for care and decision-making power. The costs, location and quality of health services are also important. These factors are interconnected in different ways to determine use of health care^{13,14,15}.

K. S. Sugathan, Vinod Mishra, *et al* did a study regarding "Promoting Institutional Deliveries in Rural India: The Role of Antenatal-Care Services". India's maternal and child health programs have not aggressively promoted institutional deliveries, except in high-risk cases. Mothers who received antenatal check-ups are two to five times more likely to give birth in a medical institution than mothers who did not receive any antenatal check-up. Age and education of the mother also have strong effects on the likelihood of institutional delivery. It is well established that giving birth in a medical institution under the care and supervision of trained health-care providers promotes child survival and lowers the risk of maternal mortality. Child Survival and Safe Motherhood (CSSM) and the Reproductive and Child Health (RCH) programs aim at expanding existing rural health services to include facilities for institutional delivery. The likelihood of giving birth in a medical institution depends on many factors, including urban/rural residence, mother's

demographic and socioeconomic characteristics, and availability and quality of health services. By concluding the study, they suggest that it is possible to promote institutional delivery by promoting antenatal check-ups and associated counselling²¹.

Barun Bhai Patel, Pranayama Gurmeet *et al* did a study on Pune, Maharashtra regarding on “A study on knowledge and practices of antenatal care among pregnant women attending antenatal clinic at a Tertiary Care Hospital of Pune, Maharashtra”. Comparing to other developed countries, the maternal health status of Indian women was found to be lower. Advancement of maternal and child health has been one of the most important constituents of the Family Welfare Programme of the Government of India.

It was found that almost all the variables such as age, education, occupation, parity, type of family, and socioeconomic status (SES) had a significant association with awareness about ANC. Appropriate antenatal care (ANC) is one of the pillars to reduce mother's mortality and infant mortality. He also found a significant association between Socio economic status and awareness about almost all the factors of ANC. While concluding the article it is essential to have Specific intervention program need to be planned and conducted to improve their maternal health practices and eventually improve the health status²².

CONCLUSION

Good antenatal care comprises regular screening which can detect and prevent early complications such as hypertension and gestational diabetes, both of which can dramatically affect the fetus. The element of ANC includes: Identification of risk, Prevention and management of pregnancy related or concurrent disease and health education and health promotion. The maternal morbidity and mortality rate can be reduced directly through detection and treatment of pregnancy related or inter current illness and

indirectly through detection of women at increased risk of complications of delivery and securing that they deliver in a suitably equipped facility.

There is a relationship between ANC and good perinatal outcomes; although it is not clear whether this is a causal relationship as attending ANC may be a marker for women who take good care of themselves generally. The results point out several avenues for further research and action to increase the number of women receiving ANC.

Interventions to promote ANC may include preparing community health workers to promote ANC, improving the quality of ANC offered by nurses at the dispensary level and strengthening health systems to ensure the availability of medical supplies. A key intervention that lowers the risk of maternal mortality comprises skilled care at birth and emergency obstetric care. There was a reduction in the maternal mortality rate due to multiple factors like increased and effective ante natal, intra natal and post-natal care

Training interventions are recommended to improve communication and to help health care professionals understand the priorities of the women. Further studies are required to examine the reason for disproportionate utilization of ANC according to risk level of pregnancy that would assist in fostering better rational use of services.

Studies are also required to assess how delivery of antenatal advice can be improved, reviewing both user and provider perspectives, including the time spent on the risk assessment system that might reduce provider-women interaction.

REFERENCES

1. Introduction [Internet]. Ncbi.nlm.nih.gov. 2020 [cited 29 February 2020]. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK409110/>
2. Gupta R, Talukdar B. Frequency and Timing of Antenatal Care Visits and Its Impact on Neonatal Mortality in EAG States

- of India. *Journal of Neonatal Biology* [Internet]. 2017;06(03). Available from: <https://www.longdom.org/open-access/frequency-and-timing-of-antenatal-care-visits-and-its-impact-on-neonatal-mortality-in-eag-states-of-india-2167-0897-1000263.pdf>
3. Arya A, Mehra N. To Study the Knowledge, Attitude and Practices Regarding Antenatal Care among Pregnant Women in Haldwani Block, District Nainital (Uttarakhand) India. *Journal of Medical Science And clinical Research* [Internet]. 2017;05(04):20093-20102. Available from: <https://jmscr.igmpublication.org/home/index.php/archive/137-volume-05-issue-04-april-2017/2114-to-study-the-knowledge-attitude-and-practices-regarding-antenatal-care-among-pregnant-women-in-haldwani-block-district-nainital-uttarakhand-india>
 4. Gupta R, Talukdar B. Frequency and Timing of Antenatal Care Visits and Its Impact on Neonatal Mortality in EAG States of India. *Journal of Neonatal Biology* [Internet]. 2017;06(03). Available from: <https://www.longdom.org/open-access/frequency-and-timing-of-antenatal-care-visits-and-its-impact-on-neonatal-mortality-in-eag-states-of-india-2167-0897-1000263.pdf>
 5. Kassaw A, Debie A. Quality of Prenatal Care and Associated Factors among Pregnant Women at Public Health Facilities of Wogera District, Northwest Ethiopia [Internet]. 2020 [cited 29 February 2020]. Available from: <https://www.hindawi.com/journals/jp/2020/9592124/>
 6. F. Ashraf, I. H. Thaver, F. Imtiaz, and A. Ayub, "Quality assessment of focused antenatal care service delivery in tertiary care health facility," *Journal of Ayub Medical College Abbottabad*, vol. 29, no. 2, pp. 219–224, 2017
 7. Yeoh PL, Hornetz K, Dahlui M. Antenatal care utilisation and content between low-risk and high-risk pregnant women. *PLoS One*. 2016;11(3)
 8. Daily iron and folic acid supplementation during pregnancy [Internet]. World Health Organization. 2020 [cited 1 March 2020]
 9. Verma R, Khanna P. Vaccination during pregnancy: Today's need in India [Internet]. *Human Vaccine Immunotherapy*. 2015 [cited 1 March 2020].
 10. H. Danielewicz, G. Myszczyzyn. Diet in pregnancy—more than food [Internet]. NCBI. 2017 [cited 29 February 2020].
 11. Magadi MA, Zulu EM, Brockerhoff M. The inequality of maternal health care in urban sub-Saharan Africa in the 1990s. *Population Studies*. 1993; 57:349-68.
 12. Wirth M, Balk D, Delamonica E, Storeygard A, Sacks M, Minujn A. Setting the stage for equity-sensitive monitoring of the maternal and child health Millennium Development Goals. *Bull World Health Organ* 2006;84:519-27.
 13. Pallikadavath S, Foss M, Stones RW. Antenatal care: provision and inequality in rural north India. *Sos Sci Med*. 2004; 59:1147-58.
 14. Gyimah SO, Takyi BK, Addai I. Challenges to the reproductive-health needs of African women: On religion and maternal health utilization in Ghana. *Sos Sci Med*. 2006;62: 2930-44.
 15. Gleit DA, Goldman N, Rodriguez G. Utilization of care during pregnancy in rural Guatemala: does obstetrical need matter? *Soc Sci Med* 2003; 57:2447-63.
 16. Abou-Zahr CL, Tessa M. Promises, achievements and missed opportunities: an analysis of trends, levels and differentials, 1990–2001.
 17. Antenatal Care in Developing Countries Promises, achievements and missed opportunities.
 18. Haftu A, Hagos H, Mehari MA. Pregnant women adherence level to antenatal care visit and its effect on perinatal outcome among mothers in Tigray Public Health institutions, 2017: cohort study. *BMC research notes*. 2018 Dec 1;11(1):872.
 19. Mistry R, Galal O, Lu M. Women's autonomy and pregnancy care in rural India: a contextual analysis. *Social science & medicine*. 2009 Sep 1;69(6):926-33
 20. Raatikainen K, Heiskanen N, Heinonen S. Under-attending free antenatal care is associated with adverse pregnancy outcomes. *BMC Public Health*. 2007;7:268.
 21. K. S. Sugathan, Vinod Mishra, Robert D. Retherford, Promoting Institutional Deliveries In Rural India: The Role of Antenatal-Care Services, National Family Health Survey Subject Reports, No. 20. December 2001
 22. Barun Bhai Patel, Pranaya Gurmeet 1, Dattreya Ramkrishna Sinalkar, Kapil H.

- Pandya, Ajoy Mahen, Neha Singh, A study on knowledge and practices of antenatal care among pregnant women attending antenatal clinic at a Tertiary Care Hospital of Pune, Maharashtra ,<http://www.mjdrdypu.org> on Friday, March 20, 2020, IP: 117.221.154.251
23. K. Phelps and C. Hased, Pregnancy & antenatal care general practice: the integrative approach series, Elsevier Health Sciences, 2011.
24. Guilleminault C, Querra-Salva MA, Chowdhuri S, Poyares D. Normal pregnancy, daytime sleeping, snoring and blood pressure. *Sleep medicine*. 2000 Oct 1;1(4):289-97.
25. Macfarlane A, Mugford M. Birth counts. Vol. 1. Statistics of pregnancy and childbirth. Vol. 2. Statistics of pregnancy and childbirth: tables. HMSO; 1984.
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