

Original Research

Quality of antenatal care and institutional delivery practice in Nepal: Further analysis of 2011 Nepal Demographic and Health Survey

Calidad de la atención prenatal y práctica institucional del Parto en Nepal:

Mayor análisis de la Encuesta de Demografía y Salud de Nepal 2011

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Abstract

Background: Nepal has relatively high (281/100,000 live births) maternal mortality and low (35%) institutional delivery rates. Government of Nepal and supporting donor partners are working together to increase institutional delivery practices by increasing public awareness on health and improving access by providing incentives for care seeking, among others. However, many women who visit health institution for antenatal care don't visit the institution for delivery practices. This study aims to determine if the number and quality of antenatal care affects institutional delivery practice in Nepal.

Methodology: Data from 4,148 women of 15-49 years who gave birth in the last five years preceding the survey was analyzed from the dataset of 2011 Nepal Demographic and Health Survey. Institutional delivery practice was compared with number of antenatal care visits, quality of antenatal care, counseling about pregnancy complications and place to visit and overall quality of care. Logistics regression analysis was performed using Stata 9.2 software.

Results: Women who had four or more antenatal care visits were more likely to visit health institution for delivery compared to those who had no or less than four visits. Similarly, those who were told about pregnancy complications and place to visit in case of complication were more likely to have institutional delivery than those who were not told of these complications. Those who received optimal quality antenatal care were more likely to have institutional delivery than those who didn't. Overall, those who had four antenatal visits and told about complications and checked for all three aspects were six times more likely to deliver at health institution than those who didn't.

Conclusions: The study concludes that quality of antenatal care is a strong predictor for utilization of institutions for delivery services and therefore quality of antenatal care should be emphasized to improve overall maternal and child health services.

Keywords: Antenatal care, quality, Nepal, DHS

Resumen

Antecedentes: Nepal tiene una tasa relativamente alta (281/100 000 nacidos vivos) de mortalidad materna y una tasa baja (35%) de parto institucional. El Gobierno de Nepal con el apoyo de socios donantes están trabajando juntos para aumentar las prácticas de parto institucional al aumentar la conciencia pública sobre la salud y mejorar el acceso a través de incentivos para la búsqueda de atención, entre otros. Sin embargo, muchas mujeres que visitan las instituciones de salud para la atención prenatal no asisten a la institución para el parto. Este estudio tiene como objetivo determinar si el número y la calidad de la atención prenatal afecta a la práctica institucional del parto en Nepal.

Metodología: Se analizaron los datos de 4148 mujeres de 15 a 49 años que dieron a luz en los últimos cinco años anteriores a la Encuesta de Demografía y Salud en Nepal para el año 2011. Práctica de parto institucional fue comparado con el número de visitas de atención prenatal, calidad de atención prenatal, consejería acerca de las complicaciones del embarazo y dónde acudir y la calidad general de la atención. Se realizó un análisis de regresión logística utilizando el software Stata 9.2.

Resultados: Las mujeres con cuatro o más consultas prenatales fueron más propensas a visitar la institución de salud para el parto en comparación con aquellas con menos de cuatro visitas. Del mismo modo, aquellas a las que se les habló acerca de las complicaciones del embarazo y donde acudir, fueron más propensas de tener parto institucional que las que no se les habló este tema. Las mujeres que recibieron atención prenatal de calidad óptima fueron más propensas a tener parto institucional que los que no lo recibieron. En general, las que tuvieron cuatro visitas prenatales y recibieron información sobre complicaciones y se analizó en los tres aspectos fueron seis veces más probabilidades de dar a luz en la institución de salud que los que no lo hicieron.

Conclusiones: La calidad de la atención prenatal, es un fuerte predictor para la utilización del servicio para parto institucional, por tanto se debe enfatizar en la calidad de atención prenatal para mejorar en general los servicios de salud materna e infantil.

Palabras clave: Atención prenatal, calidad, Nepal, ENDSA

Background

Regular checkup during antenatal period from a health worker is vital part of pregnancy care. (1) Antenatal care (ANC) contact of a pregnant woman with a health care provider is important to screen for any potential complication, to advise for good care for the mother and her newborn baby and to counsel for overall health of the family. Contact of the woman and her family with the formal health system provides an opportunity to offer health information and services that can significantly improve health of women and their babies. (2) Therefore, antenatal care is an important component of maternal and child health care and is part of the Millennium Development Goal 5, i.e. improve maternal health. (3) ANC is a determinant of safe delivery that can offer opportunities to encourage women to deliver with a skilled attendant in a health facility ultimately helping to reduce maternal mortality. (4, 5) But, inadequate care during this time breaks a critical link in the continuum of care, and affects health of both women and their babies.

Nepal, a country in South-Asia with 27 million population has high maternal mortality (281 deaths per 100,000 livebirths), (6) low utilization of delivery services from a health facility and/or skilled birth attendant (35% institutional delivery and 36% delivery assisted by a skilled birth attendant) (7). However, utilization of antenatal care services is relatively higher (58% had at least one antenatal care, 82% protected for tetanus) as well as care seeking during postnatal period (88% had measles immunization for their child). (7) The objective of the study is to determine if the number and quality of antenatal care contacts affects institutional delivery practice in Nepal.

Methodology

The study used data from the 2011 Nepal Demographic and Health Survey (NDHS). (7) The NDHS is a nationally representative survey conducted every five-year that provides data on fertility, health care behavior and practices, childhood mortality, nutrition, and knowledge of HIV/AIDS. The survey utilized two-stage, systematic cluster random sampling and with response rates of 95%. Enumerators were trained and supervised to collect information after obtaining verbal informed consent. Access to the dataset was requested and downloaded from the DHS Program website (<http://dhsprogram.com>). More details on the sampling methodology are available at DHS Program website. Information from a total of 4,148 women of 15-49 years who gave any birth in last five years was included in this analysis.

Variables

Dependent variable of this study was institutional delivery rate and independent variables were a) number of antenatal care contacts categorized as 'none or less than four' and 'four or more', b) counseling during antenatal care contacts focusing on 'pregnancy complication' and 'where to go in case of complication' c) and quality of antenatal care

contacts focusing on three clinical and laboratory examinations (i.e. if blood pressure was measured, if blood sample was taken, and if urine sample was taken). All these variables were merged to form an overall variable "overall quality of antenatal care" and categorized as 'optimal' and 'non-optimal'. These variables were defined as below (8):

Institutional delivery rate was defined as percent of live births that took place either in a public health facility or a private health facility among total live births in the five years preceding the survey.

Number of antenatal care contacts was grouped as "at least four" and "less than four" antenatal care contacts. Those women who were attended for antenatal care for their last birth for at least four times among those who were attended for antenatal care for their last birth were considered doing complete antenatal check up of "at least four" visits and remaining, including those who didn't have any antenatal care contact as "less than four" visits.

Women were asked if they were counseled about i) pregnancy complications and ii) place to visit in case of complication. These are critical information and reflect the provider-consumer interaction and grouped as 'told both info', 'told either info' or 'told neither info'.

Similarly women were asked i) if blood pressure was measured, ii) if blood sample was taken, and iii) if urine sample was taken in any of their antenatal care visits. These aspects reflect the quality of clinical examination and screening for potential complications. These responses were categorized as 'all three' performed, 'any two' of three performed, 'any one' of three performed or 'none' performed.

Finally, "overall quality" of antenatal care was assessed based on number of visits, if the woman was told about complication and where to go in case of complication, and if she was checked for blood pressure, if blood sample was taken and if urine sample was taken. Those who had at least four antenatal care contacts, who were counseled on pregnancy complications and where to go in case of complication and whose blood pressure was measured, blood sample was taken and urine sample was taken was considered as "optimal" ANC and rest as "non-optimal" ANC care.

Data analysis

Logistic regression analysis was conducted to check if the number of antenatal care contacts, counseling about complications and place to visit in case of complication, quality of antenatal care (i.e. blood pressure, blood sample, urine sample), and overall quality has an effect on delivery at health institution. All analyses were conducted in Stata Special Edition version 9.2 (9) and adjusted for complex survey design using `svy` command.

Ethical approval

Nepal Health Research Council reviewed DHS survey methodology and provided ethical approval. Interviews were conducted after informed consent and the datasets used for this analysis were anonymous.

Results

Background information

Out of 4148 women of 15-49 years who gave any birth in last five years; less than half (43.95%) were illiterate, half (50.09%) had four or more antenatal care contacts with a health care provider, nearly four in ten (38.51%) had delivered at a health facility. Nearly three-quarter (72.34%) were told about pregnancy complications and where to go in case of complication and less than half (42.29%) were checked for blood pressure and blood and urine sample were taken in any of their antenatal care contacts.

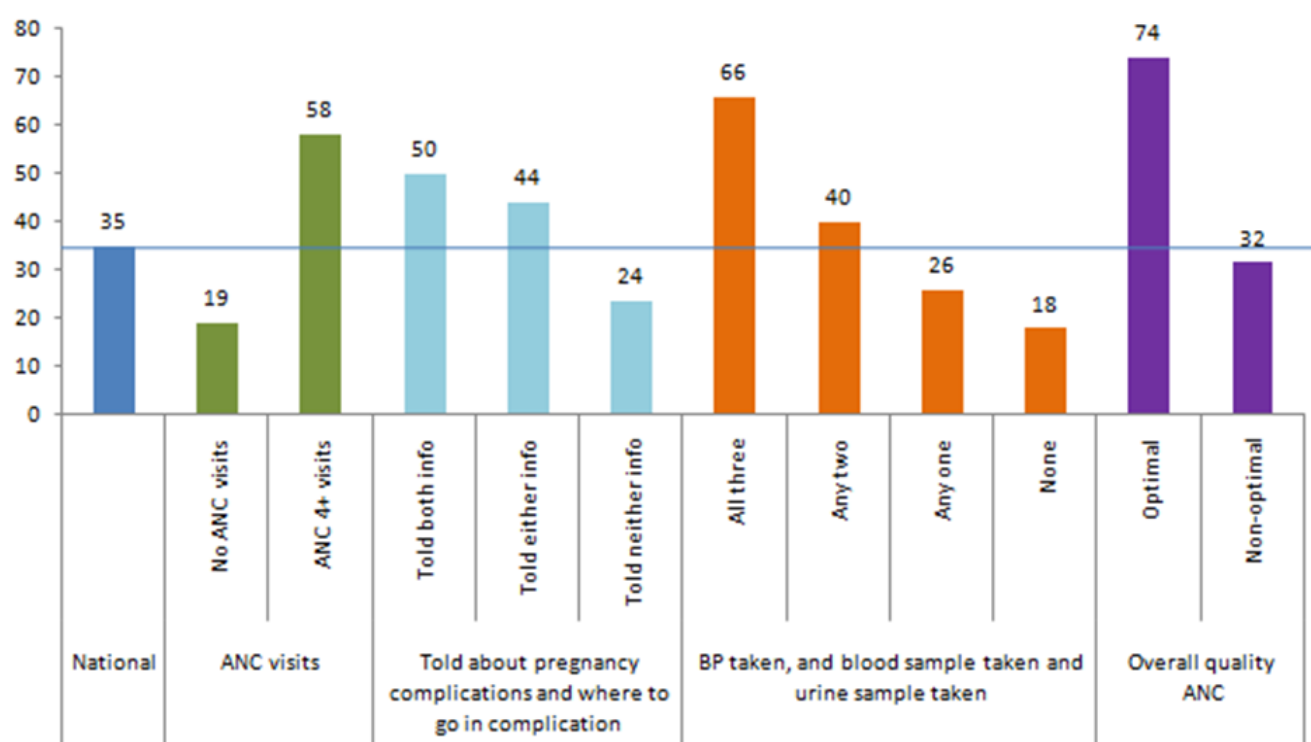
Results from descriptive analysis

Percentage of women who delivered in last five years preceding the survey at any health institution (public or private hospitals, or a health facility) was calculated, in ag-

gregate and by independent variables describe above. As shown in Figure 1, 58% {95% Confidence Interval (CI) 54 - 62%} women who had four or more antenatal care contacts with a health care provider were delivering at a health institutions but only 19% (95% CI 16 - 22%) of those who had less than four antenatal care contacts. Women (50%, 95% CI 46 - 54%) who were told about pregnancy complications and where to go in case of complication had higher institutional delivery rate than those who were told either of those two information (44%, 95% CI 36 - 53%) or neither of those information (24%, 95% CI 19 -29%).

Women were asked if their blood pressure was measured, if blood sample was taken and if urine sample was taken in any of their antenatal care contacts. Those who were checked for all three were visiting health institutional for delivery more frequently (66%, 95% CI 62 - 70%) than others. Those women with optimal ANC care (i.e. who had four or more antenatal care contacts, who were told about pregnancy complication and where to go in case of complication and who were checked for all three aspects) were visiting health institution for delivery more frequently (74%, 95% CI 70 - 78%) than others (32%, 95% CI 28 - 35%) with 'non-optimal' ANC care.

Figure 1. Institutional delivery rates by antenatal care



Results from regression analysis

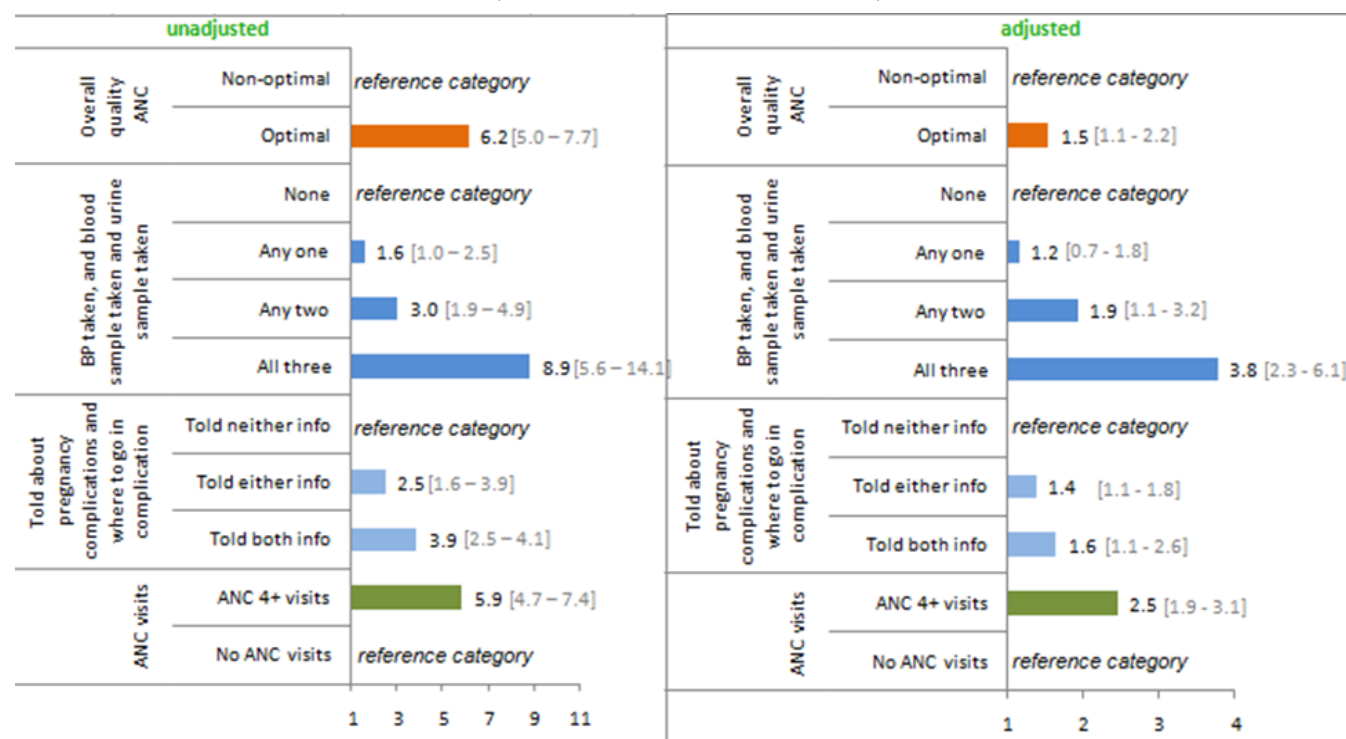
Women who had four or more antenatal care visits were more likely to visit health institution for delivery compared to those who had no or less than four visits (Unadjusted Odds Ratio [uOR] 5.89, 95% CI 4.66 - 7.44). Similarly, those who were told about pregnancy complications and place to visit in case of complication were more likely to have institutional delivery than those who were not told of these complications (uOR 3.90, 95% CI

2.48-4.14). Those who were checked for key examinations (i.e. blood pressure, blood sample and urine sample) were more likely to have institutional delivery than those who didn't have all those examinations (uOR 8.85, 95% CI 5.56-14.07). Overall, those who had 'optimal quality ANC' were six times more likely to deliver at health institution than those who didn't (OR 6.18, 95% CI 5.02-7.64) have optimal quality ANC.

When adjusted for all these co-variates, women who had four or more antenatal care visits are more likely to visit health institution for delivery compared to those who had no or less than four visits (Adjusted Odds Ratio [aOR] 2.5, 95% CI 1.9-3.1). Similarly, those who were told about pregnancy complications and place to visit in case of complication were more likely to have institutional delivery than those who were not told on the complications

(aOR 1.6, 95% CI 1.1-2.6). Those who were checked for key examinations (i.e. blood pressure, blood sample and urine sample) were more likely to have institutional delivery than those who didn't have quality care (aOR 3.8, 95% CI 2.3 - 6.1). Overall, those who had 'optimal quality ANC' were 1.5 times more likely to deliver at health institution than those who didn't (aOR 1.5, 95% CI 1.1 - 2.2).

Figure 2. Unadjusted and adjusted logistic regression model to predict institutional delivery practice in Nepal
(Odds Ratios with 95 % Confidence)



Discussions and conclusion

This study concludes that quality of antenatal care is a strong predictor for utilization of institutions for delivery services. In Nepal, efforts are being made to improve institutional delivery rates by improving demand and supply systems (10) but they are not well connected and focused to improve antenatal care quality, which is a missed opportunity to improve institutional delivery practices and overall maternal and child health. Global studies have shown that improving quality of care during antenatal care contact is an important part of the improving maternal and child health (2, 5, 11) and focus should be beyond counting number of contacts but must monitor the content of services received by the pregnant women as part of her visit.(12) Despite various socio-cultural and geographic barriers to seek services(4), satisfactory proportion of women are coming in contact (at least once) with a health care provider(7, 11) and providing good quality of services (including information and counseling) would lead to improved utilization of health facility for delivery services resulting overall improvement in maternal and child health.

Conflict of interest

None

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