

To know the impact of prepregnancy advocacy for safe maternity among rural, tribal women of a remote region: a community-based observational study

Abstract

Background: Prepregnancy advocacy is essential for ensuring safe maternal, perinatal outcomes.

Objective: Present community-based prospective study was conducted to know impact of prepregnancy advocacy on pregnancy outcome in rural, tribal women.

Methodology: Community-based observational study was carried out in tribal communities of remote, forestry, hilly region in 100 villages around village with health facility. All 100 villages were randomly divided into 50 study villages, where PA for safe maternity was provided to women who could have pregnancy and were wanting to have a baby and 50 control villages where no PA was provided. After advocacy round, pregnant women of 15 to 39 years of age, 500 in study and 500 in control villages were enrolled as study subjects. This was followed by post birth information collection by conducting face-to-face interviews by research assistant, regarding impact of prepregnancy advocacy.

Results: Of the total 500 women in study villages, 73.2% sought antenatal care compared to 39.2% in control villages. In study villages, 66.0% women got registered in health facilities for delivery, with 96.6% health facility births. In comparison only 42.4% women registered for delivery, however 95.6% did deliver in health facilities in control villages also. Similarly, 95.8% of women in study villages had live-births with 2.6% stillbirths, compared to 92.6% live-births with 5.4% stillbirths in control villages. Neonatal birth weight was better in more women of study villages compared to controls (57.4% of babies in study villages were born with birth weight ≥ 2.5 - ≤ 3.5 Kg compared to 52.4% in control villages).

Conclusion: PA impacted maternity care, more women sought antenatal care and many registered for birth before birth time. However, PA needs to be a continuous process to have real impact. Prepregnancy advocacy is crucial for effective utilization of maternity care to enhance maternal and newborn health.

Keywords: antenatal care, health facility birth, prepregnancy advocacy

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Abbreviations: SC, sub centre; PHC, primary health centre; SDH, sub district hospital; RH, referral hospital; NM, nurse midwife; Dr., Doctor; PC, prepregnancy care; CS, caesarean sections

Background

Maternal deaths resulting from pregnancy and childbirth complications are a major global health problem. A substantial number of these fatalities can be prevented through prepregnancy advocacy and prepregnancy care (PC).¹ Studies have revealed that PC is essential for ensuring safe maternity and perinatal outcome.^{2,3} PC includes biomedical, behavioral, and social interventions for couples before conception to ensure safe maternity outcomes. Numerous recent studies have highlighted the importance of PC in optimizing women's health before conception to improve maternal and child wellbeing.^{4,5} PC addresses preexisting health issues, behaviours that affect pregnancy, and raises awareness about safe maternity with the ultimate aim of safe pregnancy outcome and safe future of the mother and the baby. Maternal and perinatal morbidities and mortalities due to pregnancy-related complications continue to be more in rural remote regions though they are global challenges Even prepregnancy advocacy can do something, especially in remote villages. Addressing these factors through improved health systems and targeted interventions are crucial in reducing maternal and perinatal morbidity and mortality

globally. Hence, there is a widespread need for a continuum approach before and during pregnancy to reduce maternal and neonatal deaths. Study question _Whether prepregnancy advocacy is effective for better pregnancy outcome.

Objective

The present community-based prospective study was conducted to know the impact of prepregnancy advocacy on pregnancy outcome in rural, tribal women residing in remote villages in a forestry and hilly region.

Material and methods

After approval of the institute's ethics committee, and informed consent from the participants, the prospective study was carried out in 100 villages over two years. The villages were randomly divided into 50 study villages where PA for safe maternity was done for all women who could have pregnancy and were planning to have pregnancy for safe maternity and 50 control villages where no such action was taken. However, women in all villages continued to have their regular care. After advocacy 500 women, who became pregnant in study villages were enrolled and 500 pregnant women were enrolled in control villages also.

Study setting: Community based study was carried out in tribal communities of remote, forestry and hilly region in 100 villages around the village with health facility.

Study Design: Prospective, observational, descriptive longitudinal study.

Study period: Two years

Inclusion criteria: All those diagnosed with early pregnancy during the study period, residing in 100 villages around the village with a health facility (study centre) and willing to be a part of the study, were randomly enrolled as participants.

Exclusion criteria: Non pregnant, postpartum and postabortal women and those not willing to be a part of the study were excluded.

Sampling technique: The calculated sample size was 1000 with a 95% confidence and considering a 10% risk of dropouts using a free online statistical calculator (statulator).⁶ Ten women with early pregnancy were randomly selected from each of the 100 villages, making a total of 1000 women belonging to 15 to 39 years of age as study subjects. Plan was to include women up to 45 yrs of age, but the eldest was 39yrs.

Data collection

Data collection involved gathering information about the impact of community-based prepregnancy advocacy on rural, tribal women through face-to-face interviews conducted after childbirth. These interviews were conducted by the research assistant at locations in the villages mutually convenient for the participants and the research assistant, with help of a predesigned tool that included both open-ended and closed-ended questions. Participants did not fill out the tool themselves. Details regarding antenatal care, place of care, registration for delivery at health facility, awareness about health facility births, including number of live births, stillbirths, and birthweight were recorded for all the participants of control and study villages.

Statistical analysis

The data was statistically analysed using Statistical Package for the Social Sciences (SPSS) software version 21.0. The numerical data was presented as numbers and percentages and categorical variables as frequencies or rates wherever needed. Comparison of categorical variables was done using the chi-square test and a p-value <0.05 was considered statistically significant.

Results

Of total 500 women interviewed in 50 control villages, many belonged to 20-29 years of age (62.6%), had low education (45.4%), shop-keepers by occupation (35.0%), belonged to middle-economic class (26.4%), and had one to two previous live births (42.2%). Of these 500 women in control villages, 196 (39.2%) sought antenatal care with majority at Sub-centres (SC)/Primary Health Centres (PHCs) (56.1%) from nurse midwives (NM) (60.7%), with four to five visits during pregnancy (67.9%). It was observed that women with higher education, working, belonging to the upper-economic class and with their first pregnancy, went for regular antenatal care. **Table 1** depicts the relationship between antenatal care and various demographic features of women in control villages **Table 1**. In 50 study villages, the majority women belonged to 20-29 years of age (63.4%), had low-level of education (40.2%), shop-keeper by occupation (33.8%), belonged to middle-economic class (29.0%), and had one to two previous live births (45.4%). Of these 500 women in study villages, 366 (73.2%) sought antenatal care compared to 39.2% in control villages ($p=0.001$), with majority at SC/ PHC (64.2%) ($p=0.001$) from trained medical professional (65.0%) compared

to NM in control villages ($p=0.001$) with four to five visits during pregnancy (66.9%). It was revealed that even women with minimum levels of education, home-makers or labourers by occupation, belonging to lower-economic class and with any parity went for regular antenatal care when they were given PA. **Table 2** depicts the relationship between antenatal care and various demographic features of women in study villages **Table 2**. Hence, a significant difference was observed in women going for antenatal care especially by trained medical professionals between study and control villages indicating the impact of prepregnancy advocacy and awareness about need for antenatal care during pregnancy ($p=0.001$).

When interviewed about their delivery registration at healthcare facilities in control villages, 212 (42.4%) women got themselves registered at SC/PHC for delivery. The remaining 288 (57.6%) women didn't get themselves registered for delivery. Of these 288 women, 56 (19.4%) reported lack of awareness about delivery at healthcare facility, 46(16.0%) reported that their family members objected for hospital delivery, 34 (11.8%) reported lack of healthcare facility in vicinity, 43 (14.9%) reported that they were scared of hospitals and the remaining 109 (37.8%) reported delivery at home by family members. The majority of women who didn't get themselves registered for birth at a health facility, either were uneducated or had low education, agriculture or casual labourers, and belonged to lower economic class as depicted in **Table 3**. In study villages, 330 (66.0%) women reported that they got themselves registered at SC/PHC for delivery, significantly more than controls ($p=0.001$). The remaining 170 (34.0%) women didn't get themselves registered for delivery. Of these 170 women, 35 (20.6%) reported lack of awareness about delivery at healthcare facility, 31(18.2%) reported that their family members objected for hospital delivery, 28 (16.5%) reported lack of healthcare facility in vicinity and the remaining 42 (24.7%) said family members delivered at home. The majority of women who got themselves registered for delivery were young (20-29 years), educated, working, and belonged to middle and upper economic classes as depicted in **Table 4**. A significant difference was observed in the registration for delivery at healthcare facilities between the control and study villages where PA was provided ($p=0.001$).

In control villages, 468 (93.6%) women had delivery at a health facility and 32 (6.4%) had home births. Of these 468 women, 291 (62.2%) had births at SC/PHC and 177 (37.8%) at Sub-District Hospital (SDH) or Referral hospital (RH). Furthermore, of total 500 births 475 (95.0%) were normal births and the remaining 25 (5.0%) by caesarean sections (CS). **Table 5** depicts the relationship between demographic features of women with place and mode of delivery in control villages **Table 5**. In study villages, of 500 women, 483(96.6%) had health facility births and 17 (3.4%) had home births. Of these 483 women, 313 (64.8%) had births at SC/PHC and 170 (35.2%) at SDH/RH. Furthermore, of the total 500 births, 485 (97.0%) were normal births and the remaining 15 (3.0%) by CS. **Table 6** depicts the relationship between demographic features of women with their place and mode of delivery in study villages **Table 6**. When asked about the status of babies at birth, of 500 babies in control villages, 463 (92.6%) were live births, 27 (5.4%) stillbirths and 10 (2.0%) had early neonatal deaths as depicted in **Table 7**. Furthermore, 52.4% babies had birth weight between ≥ 2.5 - ≤ 3.5 Kg compared to 13.2% having birth weight ≤ 1.4 Kg as shown in **Table 8**. Similarly, in study villages, of total 500 babies, 479 (95.8%) were alive, 13 (2.6%) stillbirths and eight (1.6%) had early neonatal deaths as depicted in **Table 9**. Moreover, in this group, the many (57.4%) babies were born with a birthweight ≥ 2.5 - ≤ 3.5 Kg, and only 12.4% had birth weight ≤ 1.4 Kg **Table 10**. A significant difference was found in villages where PA provided to women in terms of maternity care($p=0.001$).

Hence, it was observed that in 50 villages where PA was provided to women planning to conceive, more women had antenatal care at health facilities by trained healthcare professional, registered for delivery at health facility and had better perinatal outcome in terms of live births and birth weight irrespective of their educational status, profession, economic status and previous births. However, it was also evident that continuity is needed, though little advocacy also helps.

Discussion

PC is essential for promoting maternal and fetal neonatal health. It involves various interventions designed to optimize maternal health before conception, thereby enhancing the chances of a healthy pregnancy and birth.^{7,8} PC results in large number of health and social benefits, especially in low and low middle income countries. They include prevention of child marriages, nutrition and hygiene, generating awareness among women and couples about the dangers of short birth intervals, risks of teenage pregnancies and promoting/providing contraceptives etc.⁵ However, a significant amount of attention must first be given to advocacy. Only after advocacy is carried out, care is then sought and accepted. The present study revealed that prepregnancy advocacy is crucial for maternal and fetal neonatal health. It was observed that in villages where prepregnancy advocacy provided to women planning to conceive, significantly more women sought regular antenatal care at health facilities by trained professionals, registered for births at health facilities and had better perinatal outcome, such as more women having live births and more with better birth weights, regardless of the women's educational status, profession, economic status, or previous births.

A recent hospital-based study in Ethiopia revealed that delaying the start of antenatal care is associated with an increased risk of maternal mortality. Women who do not begin antenatal care early in their pregnancy may face pregnancy-related health challenges, long term health issues, and complications during pregnancy.⁹ This is where prepregnancy advocacy comes into play. Prepregnancy advocacy and PC complete the continuum of health surveillance and early intervention, ensuring that women enter pregnancy in optimal health through its comprehensive advocacy efforts. By implementing interventions that enhance women's health before conception, it aims to improve outcomes for mothers and newborns. Providing simple interventions before pregnancy can prevent a significant proportion of maternal and neonatal mortality and morbidity.¹⁰ A recent hospital-based study in India found that women with poor health who conceive without sufficient PC were more likely to experience maternal and fetal complications.¹¹ Another recent systematic review, highlighted the necessity of PC. It reported that PC is a strategic intervention that can enhance neonatal and birth outcomes by addressing modifiable risk factors and optimizing maternal and fetal health prior to pregnancy.¹² A similar community-based study from Ethiopia revealed that millions of women and newborns in low-income countries die due to issues that begin before pregnancy and worsen during pregnancy when PC is not provided, further emphasizing the need for PC.¹³ For PC awareness is essential. Prepregnancy advocacy creates awakening for safe maternity, including PC. It needs to be continuous.

Conclusion

In the present study it was found that 39.2% women in control villages sought antenatal care compared to 73.2% in study villages where prepregnancy advocacy was provided. Furthermore, 66.0% women got registered in healthcare facilities for delivery with 96.6% having health facility births in study villages compared to only 42.4% women registered for births, though 95.6% delivered at

health facilities. Similarly, 95.8% of women in study villages had live births compared to 92.6% in control villages. Hence, prepregnancy advocacy significantly impacted the outcome. Raising awareness and education about prepregnancy advocacy is crucial for effective utilization of health services for safe maternity for the best pregnancy outcome.

Declarations

The present study was conducted after approval of the Ethics Committee after informed consent from participants.

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Conflicts of interest

Nil.

References

1. GBD 2015 Maternal Mortality Collaborators. Global, regional, and national levels of maternal mortality, 1990–2015: a systematic analysis for the global burden of disease study 2015. *Lancet*. 2016;388(10053):1775–1812.
2. Temple RC, Aldridge VJ, Murphy HR. Prepregnancy care and pregnancy outcomes in women with type 1 diabetes. *Diabetes Care*. 2006;29(8):1744–1749.
3. Murphy HR, Roland JM, Skinner TC, et al. Effectiveness of a regional pre-pregnancy care program in women with type 1 and type 2 diabetes: benefits beyond glycemic control. *Diabetes Care*. 2010;33(12):2514–2520.
4. Tekalign T, Lemma T, Silesh M, et al. Mothers' utilization and associated factors of preconception care in Africa, a systematic review and meta-analysis. *PLoS One*. 2021;16(7):e0254935.
5. Lassi ZS, Kedzior SG, Tariq W, et al. Effects of preconception care and periconception interventions on maternal nutritional status and birth outcomes in low- and middle-income countries: a systematic review. *Nutrients*. 2020;12(3):606.
6. Dhand NK, Khatkar MS. *Statulator: an online statistical calculator. sample size calculator for estimating a single proportion*. 2014.
7. Demisse TL, Aliyu SA, Kitila SB, et al. Utilization of preconception care and associated factors among reproductive age group women in Debre Birhan town, North Shewa, Ethiopia. *Reprod Health*. 2019;16(1):96.
8. Amaje E, Fikrie A, Utura T. Utilization of preconception care and its associated factors among pregnant women of west Guji Zone, Oromia, Ethiopia, 2021: a community-based cross-sectional study. *Health Serv Res Manag Epidemiol*. 2022;9:23333928221088720.
9. Tadele F, Getachew N, Fentie K, et al. Late initiation of antenatal care and associated factors among pregnant women in Jimma Zone Public Hospitals, Southwest Ethiopia, 2020. *BMC Health Serv Res*. 2022;22(1):632.
10. Dean SV, Imam AM, Lassi ZS, et al. Importance of intervening in the preconception period to impact pregnancy outcomes. *Nestle Nutr Inst Workshop Ser*. 2013;74:63–73.

11. Phalke RD, Patil RT, Jain P, et al. Study of pre-conception care (PCC) amongst women in the first trimester coming to the obstetrics and gynaecology (OBGY) outpatient department (OPD) of a hospital in a rural area. *J Family Med Prim Care*. 2023;12(9):1879–1884.
12. Khekade H, Potdukhe A, Taksande AB, et al. Preconception care: a strategic intervention for the prevention of neonatal and birth disorders. *Cureus*. 2023;15(6):e41141.
13. Habte A, Dessu S, Haile D. Determinants of practice of preconception care among women of reproductive age group in southern Ethiopia, 2020: content analysis. *Reprod Health*. 2021;18(1):100.