A Study on Association of Empowerment of Women with Utilization of Antenatal Care Services during Pregnancy in Rural Areas of Varanasi District, UP, India

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Abstract

Introduction: Pregnancy and childbirth are generally times of joy for parents and families. Pregnancy, birth and motherhood, in an environment that respects women, can powerfully affirm women’s rights and social status without jeopardizing their health. On the other hand empowerment is a process of development of status of women in society and directly influences the utilization maternal health care services. Therefore, reproductive healthcare and women’s empowerment go hand in hand, especially in rural areas. Thus the aim of this study is to find out the association between women’s empowerment and the utilization of antenatal care services in rural areas.

Materials and Methods: This is a community based cross-sectional study based on primary data at individual level. The study was conducted with the women of reproductive age group (15-49 years) who had at least one child up to age of 2 years, in rural areas of Varanasi district, Uttar Pradesh, India with sample size of 523. Pre-tested & structured interview schedule was used for data collection. Women Empowerment Scale was used to measure the status of women empowerment.

Finding of the study: Data reveals significant association between utilization of antenatal care services with respondent’s age, caste, education, occupation, age at marriage & socio-economic status of family. The results indicate that if women were empowered in term of mobility, freedom from family domination and economic security they were better utilizing antenatal care services as compared to non-empowered women. This finding confirms that women’s empowerment is crucial to improve maternal health care especially in rural setting.

Conclusion: Women’s empowerment has a significant and positive impact on receiving regular antenatal care. The study results suggest that policy actions that increase women’s empowerment could be effective in helping assure improved maternal health care utilization, and as a result, better maternal and child health outcomes.

ABBREVIATIONS

ANC: Antenatal Care; PHC: Primary Health Centre; SC: Sub-Centre; PCI: Per Capita Income; IFA Tablets: Iron Folic Acid Tablets; TT Injections: Tetanus Toxoid Injections

INTRODUCTION

Women’s health is an important component of women’s empowerment. However the accumulated research evidences shows that the achievement levels in providing better health care and safe motherhood for women, especially for rural women, are not at expected levels. Utilization of maternal health care services depends not only on the availability of healthcare services but also on various other factors such as distance to health care facility, perception of women and their families regarding the need for care, social restrictions on freedom to movement, the opportunity cost of accessing health care, and the interaction between the client and the provider of formal health care system (World Population Monitoring, 1998; IIPS, 2000, IIPS, 2007) [1]. Women’s relative lack of decision-making power, mobility and their unequal access to employment, finances, education, basic health care are considered to be the root causes of their ill-health. Further, women’s empowerment raises the level of participation, which enables women to make decisions based on their own views and perspectives. Women’s empowerment has a significant and positive impact on receiving regular antenatal care [2,3].

Accordingly, the main aim of this paper is to explore the synergy between woman’s empowerment and utilization of antenatal care services (ANC) and to understand how empowerment helps in motivate the utilization of ANC services to expand women’s ability to have resources and to make strategic
life choices [4,5].

**Objective of the study**

The objective of the study to assess the contribution of the dimensions of empowerment status of women's on the utilization of antenatal care services.

**MATERIALS AND METHODS**

This is a community based cross-sectional study design based on primary data at individual level. The study was conducted among the women of reproductive age group (15-49 years) who had at least one child up to age of 2 years. Multistage stratified random sampling method was adopted for selection criteria. At first stage, out of 8 blocks in Varanasi district one block with corresponding block PHC has been selected randomly. At second stage, three sub-centers were selected from primary health centre (PHC) by applying stratified random sampling procedure and at third stage villages were selected randomly. One sub-centre within the range of 5 km. from PHC, second sub-centre from 5 to 10 km. and third sub-centre was selected from >10 km. from PHC by applying simple random sampling procedure. Married women of reproductive age group between 15 to 49 years having at least one live child up to age of 2 years were included in the study to remove recall biases. Women who are mentally ill and not willing to participate were excluded from the study. Considering the proportion of married women who usually participate in household decisions as 44.9% (NFHS-III, 2005-06, U.P., India) and relative precision 10% with 10% non-response rate the total sample size was calculated as 523. The data was collected during the period of 15 March to 30 August 2015.

Pre-design and Pre-tested interview schedule was used to collect basic information about respondent’s and utilization of antenatal care services. Women Empowerment Scale (Nanda, Geeta. 2011. Compendium of Gender Scales. Washington, DC: PHI 360/C-Change) was applied to measure the status of women empowerment. Types of items included in this scale are women mobility, women freedom from family domination. Women economic security and contribution to family support. Women mobility subscale include whether women had gone market, hospital/clinic/doctor, movie and visited outside the village. Each respondent was given 1 point for each place she had visited and an additional point if she had ever gone there alone. The scale ranged from 0 to 8 and was employed as a continuous variable. A woman with a score of 4 or better was classified as empowered. Women freedom from family domination subscale items include whether husband/other family member took your money when you didn’t want him to, took your land/jewellery/poultry/ livestock when you didn't want him to, prevented you from visiting your parents and prevented you from working outside the home. A woman was classified as “empowered” and coded as 1 if she said that none of these things had happened to her. The category “not empowered,” was coded as 0. Women's economic security and contribution to family support subscale items include do women have, in your own name, own any land / homestead land / house, do women yourself own any productive assets (e.g., cattle or sewing machine), do women have any cash savings and women have ever used your savings for business or money-lending purpose. Economic security was based on a scale from 0 to 4. One point was assigned for each of the following: if a woman owned her house or homestead land; owned any productive asset; had her own cash savings; and her savings were ever used for business or money-lending. A woman with a score of 2 or better was classified as empowered. Contribution to family support measured whether the respondent said she provided all, most, half, or some of her family’s support, as opposed to very little or none.

The SPSS trial version 21.0 (Statistical Package for Social Sciences) was used to analyze the data. Various parameters as frequency tables, cross-tables, correlation, and regression analysis were developed to analyze the relation between variables. The study protocol was approved by the Institutional Review Board, Institute of Medical Sciences, Banaras Hindu University, Varanasi and written informed consent was taken from the participants prior to data collection.

**FINDINGS OF THE STUDY**

**Socio-demographic profile of the respondents**

The Table (1) shows background characteristics of respondent’s presents in terms of percentage distribution by age, religion, caste, education, occupation and wealth status. The age distributions of female respondents is 6.3% in the age group 15-20 years to 81.1% in the age group 21-30 years and rest of belong to >30 years of age group. Mean age of respondents is 25.75±4.12, while minimum age of respondents is 17 years and maximum age is 42 years. Among all respondents, 99.0% of women were currently married while 1.0% are separated or widowed. The mean age of marriage of respondents was 17.85±2.71, with minimum age of marriage was at 6 years and maximum age was at 25 years. Overall, majority of respondents (~90%) belong to Hindu religion while remaining is from other religion. The distribution of respondents by caste shows that 46.3% respondents are from other backwards class, 42.4% from SC and ST category and remaining 11.3% respondents belong to general category.

The distribution of the population by completed number of years of education reveals that 22.8% women have no school education or formal education. About 54% of women attained education up to high school and above. While only 21% women have graduate and higher level of education. The educational attainment of a society’s population is an important indicator of the society's stock of human capital and its level of socioeconomic development. Education also enhances the ability of individuals to achieve desired demographic and health goals. Only 20.8% women were employed and rest of them working as home makers. Approximately 45% women were got married before the age of 18 Years. Socio-economic class of the family was classified on the basis of Per Capita Income (PCI) according to BG Prasad socioeconomic classification (i.e. modified version May-2014). About the socio-economic status of the family approximately 48% of the families family belongs to lower class, 10% from middle class and only 1% family belongs to higher class and rest lie between them.
Utilization status of antenatal care services by reproductive age group women

Antenatal care is very important for pregnant women. Early and regular checkups by trained service providers are very necessary in assessing the physical status of women during pregnancy. The respondents were asked whether they received ANC during the last pregnancy and the information gathered in this respect is shown in Table (2), among the respondents 64.4% respondents registered her pregnancy before or on 3rd months. When they were asked about other ANC services, weighted measurement was taken 74.8%, height measured only 6.1%, blood pressure taken for 59.6% and urine test was done for 51.6% of pregnant women. About IFA consumption, ~70% women received ≥ 100 IFA tablets however only 55.1% of mothers consumed IFA during pregnancy. Out of total 67.6% women have 3 or more ANC visits during pregnancy and only 47.6 % women received full ANC during last pregnancy. Full ANC includes at least 100 IFA Tablets, 2 TT Injections and ≥ 3 ANC Visits during Pregnancy. Data indicates significant association between the full ANC check-ups and respondent’s age, caste, education, occupation, age at marriage, socio-economic status of family, number of ANC visits and month of registration of pregnancy. Husband’s education, occupation and age at marriage are also significantly associated with utilization of full ANC services.

Antenatal care service (ANC) utilization with reference to empowerment of women

Timely antenatal check-ups have an impact in the reduction of maternal morbidity and maternal deaths. In the absence of proper
Table 2: Proportion of utilization of antenatal care services.

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Frequency (N)</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration of Last Pregnancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Done</td>
<td>Yes</td>
<td>512</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>523</td>
</tr>
<tr>
<td>Month of Registration</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>≤ 3</td>
<td>330</td>
</tr>
<tr>
<td></td>
<td>&gt; 3</td>
<td>182</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>512</td>
</tr>
<tr>
<td>Consumed &gt; 100 IFA tablets</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>282</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>230</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>512</td>
</tr>
<tr>
<td>Received 2 TT Injections</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>474</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>512</td>
</tr>
<tr>
<td>No. of ANC Visits</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt; 3 times</td>
<td>166</td>
</tr>
<tr>
<td></td>
<td>≥ 3 times</td>
<td>346</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>512</td>
</tr>
<tr>
<td>Received Full ANC Package</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>249</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>263</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>523</td>
</tr>
</tbody>
</table>

Abbreviations: IFA Tablets: Iron Folic Acid Tablets; TT Injections: Tetanus Toxoid Injections; ANC Visits: Antenatal Care Visits

antenatal check-ups may cause complications in pregnancy. Reproductive healthcare and women’s empowerment go hand in hand, especially in rural areas. Utilization of maternal health care services depends not only on the availability of healthcare services but also on various other factors. This confirms the importance of women’s empowerment on increasing antenatal health care utilization. Women who have a problem at getting permission to go to outside have less opportunities to access health care services in compare to whom who have free to visit the outside the home. There was a significant association found between the dimension women mobility, freedom from family domination and economic security with the utilization of antenatal care services in the studied villages.

**Early registration of pregnancy:** Early registration makes it possible to have a good idea of the pre-pregnancy state of the women by noting certain baseline measurements, such as body weight, blood pressure and urine testing [8,9]. When we talk about early registration of pregnancy, women’s mobility, women’s freedom from family domination and economic security all these factors were significantly associated with this. Table (3) shows that women’s freedom from family domination possesses great impact on early registration of their pregnancy (P<0.05).

The level of education received by the mother, the age of the mother and occupation were also associated with early registrations of pregnancy. It is important to raise public awareness about the benefits of early antenatal registration in routine health education programmes, especially among adolescents female. Better education and better employment opportunities for women would contribute considerably to enhance the ratio of early antenatal registration of pregnancy.

**Antenatal (ANC) Visits:** Antenatal care visits is an essential part of pregnancy and should start as soon as women become pregnant. Regular visits for health check-ups to the doctor during pregnancy are aimed to ensure that the health of the pregnant women and the growing foetus is well maintained. When all stays well and proper care is taken, the pregnancy is generally of low risk.

In this study, we found that there was a strong association between the dimension economic security and freedom from domination with the ANC visits in the studied village. Family support has been regarded as one of the factors that had an influence on antenatal care visits. The results indicate that there is a significant relationship between variables of freedom of movement and number of antenatal care (Table 4).

**Consumption of IFA tablets:** Anaemia is highly prevalent among pregnant women and iron deficiency is the most important cause of anaemia. Deficiencies in iron and folic acid during pregnancy can put negative impact on the health of the mother, her pregnancy. Pregnant women require additional iron and folic acid to meet their own nutritional needs as well as those of the developing fetus. Evidence has shown that the use of iron and folic acid supplements is associated with a reduced risk of iron deficiency and anaemia in pregnant women. The consumption of IFA tablets is directly influenced by the respondent’s age, caste, education, husband occupation and socio-economic status of family (P<0.05). The finding of this study shows that women economic security and family support was strongly associated with consumption of IFA tablets by pregnant women (Table 5).

**Complete antenatal check-ups:** Antenatal care is the clinical assessment of mother and foetus during pregnancy.
Table 3: Registration of pregnancy in relation to status of empowerment of women.

<table>
<thead>
<tr>
<th>Status of Empowerment</th>
<th>Total (N=512)</th>
<th>Registration of Pregnancy</th>
<th>≤ 3 Months</th>
<th>&gt; 3 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>On the basis of Women’s Mobility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empowered Women</td>
<td>362</td>
<td></td>
<td>256</td>
<td>70.7</td>
</tr>
<tr>
<td>Not Empowered Women</td>
<td>150</td>
<td></td>
<td>74</td>
<td>49.3</td>
</tr>
<tr>
<td>(\chi^2 = 21.169); df = 1, p &lt; 0.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On the basis of Women’s Freedom from Family Domination</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empowered Women</td>
<td>402</td>
<td></td>
<td>284</td>
<td>70.6</td>
</tr>
<tr>
<td>Not Empowered Women</td>
<td>110</td>
<td></td>
<td>46</td>
<td>41.8</td>
</tr>
<tr>
<td>(\chi^2 = 31.329); df = 1, p &lt; 0.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On the basis of Women’s Economic Security</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empowered Women</td>
<td>105</td>
<td></td>
<td>90</td>
<td>85.7</td>
</tr>
<tr>
<td>Not Empowered Women</td>
<td>407</td>
<td></td>
<td>240</td>
<td>59.0</td>
</tr>
<tr>
<td>(\chi^2 = 26.061); df = 1, p &lt; 0.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4: Antenatal visits in relation to status of empowerment of women.

<table>
<thead>
<tr>
<th>Status of Empowerment</th>
<th>Total (N=512)</th>
<th>No. of ANC Visits</th>
<th>&lt; 3 Times</th>
<th>≥ 3 Times</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>On the basis of Women’s Mobility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empowered Women</td>
<td>362</td>
<td></td>
<td>103</td>
<td>28.5</td>
</tr>
<tr>
<td>Not Empowered Women</td>
<td>150</td>
<td></td>
<td>63</td>
<td>42.0</td>
</tr>
<tr>
<td>(\chi^2 = 8.883); df = 1, p &lt; 0.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On the basis of Women’s Freedom from Family Domination</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empowered Women</td>
<td>402</td>
<td></td>
<td>104</td>
<td>25.9</td>
</tr>
<tr>
<td>Not Empowered Women</td>
<td>110</td>
<td></td>
<td>62</td>
<td>56.4</td>
</tr>
<tr>
<td>(\chi^2 = 36.653); df = 1, p &lt; 0.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On the basis of Women’s Economic Security</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empowered Women</td>
<td>105</td>
<td></td>
<td>15</td>
<td>14.3</td>
</tr>
<tr>
<td>Not Empowered Women</td>
<td>407</td>
<td></td>
<td>151</td>
<td>37.1</td>
</tr>
<tr>
<td>(\chi^2 = 19.829); df = 1, p &lt; 0.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5: Consumption of IFA tablets in relation to status of empowerment of women.

<table>
<thead>
<tr>
<th>Status of Empowerment</th>
<th>Total (N=512)</th>
<th>Consumption of &gt; 100 IFA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>On the basis of Women’s Mobility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empowered Women</td>
<td>362</td>
<td>218</td>
</tr>
<tr>
<td>Not Empowered Women</td>
<td>150</td>
<td>64</td>
</tr>
<tr>
<td>(\chi^2 = 13.209); df = 1, p &lt; 0.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On the basis of Women’s Freedom from Family Domination</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empowered Women</td>
<td>402</td>
<td>253</td>
</tr>
<tr>
<td>Not Empowered Women</td>
<td>110</td>
<td>29</td>
</tr>
<tr>
<td>(\chi^2 = 46.688); df = 1, p &lt; 0.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On the basis of Women’s Economic Security</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empowered Women</td>
<td>105</td>
<td>84</td>
</tr>
<tr>
<td>Not Empowered Women</td>
<td>407</td>
<td>198</td>
</tr>
<tr>
<td>(\chi^2 = 33.158); df = 1, p &lt; 0.05</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It traditionally involves a number of routine visits and clinical assessment of pregnant women before and during pregnancy. The objective of antenatal care is to ensure the supervision of maternal and foetal well-being during pregnancy, identify and treat conditions that may threaten the health of the foetus and mother and help women to approach pregnancy and birth as positive experiences. If women aware about all these facts and able to make decisions based on their own views and perspectives.
were helpful for the utilization of ANC services.

When we talk of full ANC services, we have include in this at least 3 or more ANC visits, 2 TT injections and 100 or more IFA tablets which is significantly associated with women’ mobility and freedom from family domination. Among all empowerment variable economic securities were strongly influence the utilization of ANC services (Table 6).

**Dimensions of empowerment associated with the utilization of ANC services**

Table (7) shows the results of binary logistic regression analyses to investigate the dimensions of women’s empowerment that were associated with utilization of ANC services. Women’s mobility, freedom from family domination and economic security show significant associations with the early registration of pregnancy ($P<0.05$). If women were empowered in term of mobility (AOR=1.75, 95% CI=1.15-2.66), freedom from family domination (AOR=2.72, 95% CI=1.72-4.29) and economic security (AOR=3.33, 95% CI=1.83-6.04) are more likely to go for early registration of pregnancy in compare to not empowered women. However ANC visits and consumption of IFA tablets did not shows significant associations with women’s mobility. Finding of the study shows that if women were empowered in terms of mobility, freedom from family domination and economic security then they were more likely to go for 3 or more ANC visits and 100 IFA tablets consumption as compared to those women who were not empowered. Study

Finding reveals that women’s empowerment has positive and statistically significant effect on the utilization of ANC services. The results indicate that women who have freedom from family domination and economically secure were more likely utilized all ANC service compared with those who did not have.

**RESULTS AND DISCUSSION**

This study aimed to investigate the dimensions of women’s empowerment which are associated with an increased utilization of antenatal health care services in a village in Varanasi district.

Table 6: Complete antenatal check-ups in relation to status of empowerment of women.

<table>
<thead>
<tr>
<th>Status of Empowerment</th>
<th>Total (N=523)</th>
<th>Received Full ANC Check-ups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>%</td>
</tr>
<tr>
<td>On the basis of Women’s Mobility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empowered Women</td>
<td>364</td>
<td>200</td>
</tr>
<tr>
<td>Not Empowered Women</td>
<td>159</td>
<td>49</td>
</tr>
<tr>
<td>$\chi^2 = 25.827^a$, df = 1, p &lt; 0.05</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| On the basis of Women’s Freedom from Family Domination |     |    |     |    |
| Empowered Women               | 406 | 229 | 56.4 | 177 | 43.6 |
| Not Empowered Women           | 117 | 20  | 17.1 | 97  | 82.9 |
| $\chi^2 = 56.269^a$, df = 1, p < 0.05 |

| On the basis of Women’s Economic Security |     |    |     |    |
| Empowered Women               | 105 | 81  | 77.1 | 24  | 22.9 |
| Not Empowered Women           | 418 | 168 | 40.2 | 250 | 59.8 |
| $\chi^2 = 45.939^a$, df = 1, p < 0.05 |

We found that there was a significant association between the dimensions of women mobility, freedom from domination and economic security with the utilization of ANC services in the studied village.

A study conducted by Russell Kabir & Hafiz T.A. Khan in 2013 found that education and ANC is significantly related, suggesting that higher level of education enhances the likelihood of receiving ANC during pregnancy because educated women are aware about the importance of ANC during pregnancy. There is a strong association between the income of the respondents and ANC received by the respondents [5]. Findings of the study show that women’s education is correlated with receiving regular antenatal care. As from literature in Tajikistan, it is proved that women who have achieved secondary or higher education are more likely to receive at least four antenatal care visits compared with women who have never attended school (Kamiya 2010) [6]. The findings of this study show that wealth index significantly increases the likelihood of receiving regular antenatal care. As from literature in India, it is proved that high economic status has a positive relationship to the antenatal care score (Bloom, et al., 2001) [3].

A study conducted by Leo Kawaguchi et al., in 2014 on proxy variables on five different dimensions of women’s empowerment was obtained by principal component analysis, and were tested for an association with the utilization of maternal health services, using logistic regression models. The five dimensions extracted from the data were freedom of movement, economic security and stability, support by family and freedom from domination, decision-making in daily life, and relationship with the community/ participation in society. Among these dimensions, support by family and freedom from domination was the only factor that was positively associated with maternal health service utilization. Current age of the women was also directly associated with the utilization of ANC services, possibly influenced by the recent rapid increase in the provision of health services in the studied village [7].

The findings reveal that receiving regular antenatal care...
Table 7: Women’s empowerment and utilization of ANC services: bivariate logistic regression.

<table>
<thead>
<tr>
<th>1. Early Registration of Pregnancy</th>
<th>Independent Variable</th>
<th>AOR</th>
<th>95% CI</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women’s Mobility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empowered</td>
<td>1.75</td>
<td>1.15 - 2.66</td>
<td>0.01*</td>
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<tr>
<td>Not Empowered (RC)</td>
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<tr>
<td>Freedom from Family Domination</td>
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<tr>
<td>Empowered</td>
<td>2.72</td>
<td>1.72 - 4.29</td>
<td>&lt; 0.05*</td>
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<td>Not Empowered (RC)</td>
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<tr>
<td>Economic Security</td>
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<tr>
<td>Empowered</td>
<td>3.33</td>
<td>1.83 - 6.04</td>
<td>&lt; 0.05*</td>
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<tr>
<td>Not Empowered (RC)</td>
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</table>

| 2. ≥ 3 ANC Visits                 |                      |       |              |         |
| Women’s Mobility                  |                      |       |              |         |
| Empowered                         | 1.22                 | 0.79 - 1.88 | 0.35      |
| Not Empowered (RC)                | -                    | -      | -            |         |
| Freedom from Family Domination    |                      |       |              |         |
| Empowered                         | 3.25                 | 2.06 - 5.13 | < 0.05*    |
| Not Empowered (RC)                | -                    | -      | -            |         |
| Economic Security                 |                      |       |              |         |
| Empowered                         | 2.99                 | 1.64 - 5.46 | < 0.05*    |
| Not Empowered (RC)                | -                    | -      | -            |         |

| 3. Consumption of 100 IFA Tablets |                      |       |              |         |
| Women’s Mobility                  |                      |       |              |         |
| Empowered                         | 1.31                 | 0.86 - 2.01 | 0.19      |
| Not Empowered (RC)                | -                    | -      | -            |         |
| Freedom from Family Domination    |                      |       |              |         |
| Empowered                         | 4.14                 | 2.54 - 6.76 | < 0.05*    |
| Not Empowered (RC)                | -                    | -      | -            |         |
| Economic Security                 |                      |       |              |         |
| Empowered                         | 3.61                 | 2.10 - 6.18 | < 0.05*    |
| Not Empowered (RC)                | -                    | -      | -            |         |

| 4. Received Full ANC              |                      |       |              |         |
| Women’s Mobility                  |                      |       |              |         |
| Empowered                         | 1.65                 | 1.06 - 2.55 | 0.02*     |
| Not Empowered (RC)                | -                    | -      | -            |         |
| Freedom from Family Domination    |                      |       |              |         |
| Empowered                         | 5.11                 | 2.95 - 8.83 | < 0.05*    |
| Not Empowered (RC)                | -                    | -      | -            |         |
| Economic Security                 |                      |       |              |         |
| Empowered                         | 4.03                 | 2.38 - 6.80 | < 0.05*    |
| Not Empowered (RC)                | -                    | -      | -            |         |

*significant at 0.05

Abbreviations: AOR: Adjusted Odds Ratio; CI: Confidence Interval; RC: Reference Category
and women’s empowerment are simultaneously determined. The study shows that women’s empowerment increase the probability that the woman receives at least four antenatal cares [8,9]. Women’s autonomy has positive and statistically significant effect on maternal health service utilization. The results indicate that women who have involved in household decisions were more likely utilized all maternal health service (OR = 1.42) compared with those who did not have autonomy [10]. Another study found that women who have autonomy in decision making are more likely to have a higher level of autonomy on health care, which might lessen their reproductive behaviour risks [11].

CONCLUSION

In conclusion, to improve maternal health outcomes, it is important to motivate women to utilize the available services. Antenatal care (ANC) is an important component of maternal health which helps to identify the complications and potential risks during pregnancy and also helps to plan a safe delivery. Women’s empowerment raises the level of participation, which enable women to make decisions based on their own views and perspectives. We found that, women mobility, support by family & freedom from domination and economic security was positively associated with maternal health service utilization. It is not yet clear to what extent women’s empowerment contributes to their health status; however, the findings could be the first step towards increasing service utilization, especially for women whose access to health services is inadequate.

The study has also suggested that women should not be the only targets. Encouraging families, as well as the local community, to support women could be equally important and effective in improving their utilization of health services, as support from others was found to be associated with an increase in service utilization by women. The results shows that some factors such as women education, work status and wealth index have significant and positive impact on the utilization of antenatal care services. The study results suggest that policy actions that increase women’s empowerment could be effective in helping assure improved maternal health care utilization, and as a result, better maternal and child health outcomes.

LIMITATIONS OF THE STUDY

Having a cross-sectional design could be a weakness of this study, because it limits the establishment of the causality and temporality of effects. The cross-sectional measures did not capture the dynamism of empowerment of women’s or accumulated experiences over time. However, the qualitative part of the study did not consider the husbands’ perspective on women’s empowerment. Information from both men and women could generate more reliable information on women’s decision-making and empowerment.

ACKNOWLEDGMENTS

We would like to extend our gratitude to the participants of the study. Their cooperation was valuable, and was greatly appreciated.

REFERENCES