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Prevalence of Postnatal Care Utilization and Associated Factors among Women Who Gave Birth and Attending Immunization Clinic in Selected Government Health Centers in Addis Ababa, Ethiopia, 2016

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Abstract
Background: Postnatal period is defined as the first six weeks after birth and is critical to the health and survival of both a mother and newborn. Most maternal and infant deaths occur during this time. Yet, this is the most neglected period for the provision of quality care. More than half a million women die every year worldwide from complications in pregnancy and childbirth; most of these deaths are happening during the postnatal period. Despite the fact that Post Natal Care (PNC) service utilization would avert the death of mothers and their new born; the PNC service utilization is generally believed to be low in Ethiopia. Therefore, this study designed to identify the prevalence and associated factors of postnatal care service utilization.**Objective**: The main objective of the study was the prevalence and associated factors of postnatal care utilization in Addis Ababa 2016.**Methods**: An Institution based cross-sectional study was conducted from April 20 to May 20, 2016 at ten randomly selected government health centers in Addis Ababa. A total of 422 Women who delivered a baby 10 weeks before the survey and who come for child immunization up to 14th weeks of delivery were included in the study. Data was collected through face to face interview using a pre–tested Amharic questionnaire. Data was entered cleaned and analyzed using SPSS version 20. Frequency distributions, measures of central tendency and logistic regression were calculated and interpreted accordingly.**Result:** A total of 422 participants were included in the analysis with a response rate of 98.3 %. The mean age of the participants was 26.7 %(±SD=4.4 years). The prevalence of this finding was 277(65.6%) having utilization of postnatal care service. PNC counseling and provision of appointment, counseling on danger sign, past experience of PNC utilization, and less than 6 hours stay at health institution before discharge were showed statistical significant association for the current PNC service Utilization [(AOR=32.6, 95% CI (14.7-72.3)], [AOR (1.95, 95% CI (1.05-3.64)], [AOR=2.8, 95% CI (1.36-5.8)], [AOR= 0.22, 95% CI (0.06-0.83)] respectively.**Conclusion and recommendations:** The overall prevalence of PNC service utilization in this study was relatively good as compared to the HSDP IV report for Addis Ababa in the 2006Ethiopian feasibility year. To enhance PNC service utilization all women should be counseled about the danger signs of postnatal period and provided appointment. Further all delivering mothers should be stayed at least for 24 hours following delivery.
Keywords: postnatal care utilization, prevalence, Addis Ababa**.**

1. INTRODUCTION

More than a half a million women die every year worldwide from complications in pregnancy and childbirth (1). Maternal health represents one of the indicators of inequity between rich and poor countries. the risk of a woman dying from pregnancy or childbirth in the poorest countries can be as high as about 1 in 7, While in the richest countries it is about 1 in 30, 000 (2). Over the last few years, the global community has given greater attention to women's health. The maternal health Millennium Development Goal (MDG) 5 aims to improve maternal health by reducing maternal death and providing universal access to reproductive health care (3). However, it is believed that MDG 5 is falling severely short of its targets.

Newborn health and survival is intimately linked to the health of the mother (4). Every year, four million infants die within their first month of life, representing nearly 40 percent of all deaths of under5 age children (4). Almost all of these newborn deaths occur in developing countries, with the highest number in south Asia and the highest rates in sub-Saharan Africa (4).

In Ethiopia like many other Sub-Saharan Africa (SSA) countries, maternal and child mortality are still high. Recent estimates showed that the country still experiences high maternal, neonatal and infant mortality of 676/100,000, 37/1000, 59 per 1000 live births respectively (5). Around 80% of maternal deaths worldwide are brought about by direct causes such as hemorrhage, infection, obstructed labor, unsafe abortion, and high blood pressure(6). Severe obstetric bleeding is a major cause of death in both developing and developed countries. Postpartum bleeding can kill even a healthy woman within two hours, if unattended. It is the quickest of maternal killers. Moreover, preterm birth, asphyxia and severe infections contribute to two thirds of all neonatal deaths if not attended by skilled provider(7).

Postnatal period is defined as the first six weeks after birth and is critical to the health and survival of both a mother and her newborn. The first two days after childbirth are critical for monitoring delivery related

complications. (8) Thus a postnatal visit is ideal time to educate mother and it is recommended that all women receive at least three to four postnatal checkups as per WHO guidelines. Lack of care in this time period may result in death or disability as well as missed opportunities to promote healthy behaviors for women, newborns and children (9).

A large proportion of maternal and neonatal deaths occur during the 48 hours after delivery, and these first two days following delivery are critical for monitoring complications arising from the delivery. Thus, postnatal care is important for both the mother and the child not only to treat complications arising from the delivery, but also to provide the mother with important information on how to care for herself and her child. Safe motherhood programmers have recently increased emphasis on the importance of postnatal care, recommending that all women receive a health checkup within two days of delivery (10).

2. Statement of the Problem

The World Health Organization (WHO) stated thatPostnatal care (PNC) is defined as a care given to the mother and her newborn baby immediately after thebirth of the placenta and for the first six weeks of life(7). It is important because during this periodthe reproductive organs return to their pre gravid state.Lactation is started, the mother recuperates from the physical and emotional stress of Labor and the family adjusts to the new baby.
PNC services are to support the mother and her family in the transition to a new family consultation, prevent, early diagnose and treat complications of the mother and newborn, refer the mother and new born for specialist care when necessary, counsel on baby care, support breastfeeding, maternal nutrition, provide contraception service, and immunize the infant. With limited resources, contact with the health care system at least during the first twenty four hours and before the end of the first week would be the most effective strategy (10).

This period is generally the most neglected in developing countries mothers and new born babies do not receive postnatal care services from a skilled health care provider during the first few days after delivery (11- 13). In developed countries virtually all women and their infants receive PNC, even though the nature and frequency of this care varies considerably (11).However, in developing countries even the need for care and support after birth was less recognized and approximately one-third of women in sub-Saharan Africa give birth in facilities, and no more than 13 percent receive PNC within two days of delivery. Whether women deliver at home or in a facility, PNC services are often absent. Moreover, PNC services, where available, often lack essential elements of care required for the optimum health of the mother and her newborn (12, 14-15).

To assess the extent of postnatal care utilization, the 2011 EDHS asked respondents whether they had received a health checkup after the delivery, the timing of the first check, and the type of health provider for their last birth in the two years preceding the survey, and it was found that the level of postnatal care coverage was extremely low in Ethiopia. The great majority of women (92 percent) with a live birth in the preceding five years did not receive a postnatal checkup. Among women who received a postnatal checkup, 4 percent were examined within 4 hours of delivery, 2 percent within 4-23 hours, 1 percent within 1-2 days, and 2 percent within 3-41 days of delivery. In total, only 7 percent of women received postnatal care within two days, as recommended while half (51.5%) of them in Addis Ababa had ever used postnatal care (5). Therefore, it is important to make additional studies to describe the magnitude and associated factors of low level of postnatal care utilization. Even though PNC service utilization plays a critical role in reducing maternal and new born child mortality, little is known about its factors so, this survey is planned to identify the possible associated factorsby assessing (obstetrics and reproductive factors, socio demographic factors, knowledge of postnatal care).Therefore this study was conducted for the assessment of prevalence of postnatal service utilization and associated factors in Addis Ababa.

Magnitude of Postnatal Care Utilization

Even though there is great variability across and within countries in the reported use of postpartum services, higher levels are found in high-income countries, where less than 10-11% of women do not attend postnatal visits (20, 21). A research based on Demographic and Health Surveys conducted in 30 low-income countries between 1999 and 2004 reported that seven out of ten women do not receive any postpartum care (22). Figures were worst for countries like Ethiopia where 90% of women did not receive any postpartum care, followed by Bangladesh (73%), Nepal (72%) and Rwanda (71%). Other countries showed substantial proportions of women who did not receive any postpartum care, including Burkina Faso (44%), Cambodia (46%), Haiti (55%), and Kenya (46%) Malawi(41%), Mali (49%), Nigeria (46.5%), Uganda (57%) and Zambia (41%). On average, in the 30 countries examined, nearly 40 percent of women did not receive a postpartum care check-up (22).

A study done in Nepal found that 43.2% reported attending postnatal care within the first six weeks of birth, while 40.9% reported attending immediate postnatal care (23).while a study done in Brazil found that higher number of postnatal care utilization than many other developing counties which is 77% (24).

The 2011 Ethiopian national DHS data found that the level of postnatal care coverage is extremely low in Ethiopia. The great majority of women (92 percent) with a live birth in the preceding five years did not receive a postnatal checkup. Among women who received a postnatal checkup, 4 percent were examined within

4 hours of delivery, 2 percent within 4-23 hours, 1 percent within 1-2 days, and 2 percent within 3-41 days of delivery. In total, only 7 percent of women received postnatal care within two days (5).

The 2011 EDHS data also showed that 51.5% of women in Addis Ababa where this study conducted had at least one PNC while 47.7% of them had within two days of delivery (5).

A study done on the assessment of factors affecting utilization of postnatal care services was conducted in Jabitena district, Amhara regional state, North West Ethiopia found that the prevalence of postnatal care service utilization was 20.2% (25). Similar community study in Northern Ethiopia found that the proportion of postnatal care service utilization was 49.7% (26).

Another study done in southern Ethiopia, with regards to the level of PNC, the finding documented that the proportion of the sample households/children who got complete immunization is very low (only 37.2%) compare to many population groups in Ethiopia (27).

Associated Factors of Postnatal Care Utilization

A study done Nepal found that mothers who were from urban areas, from rich families, who were educated, whose partners were educated, who delivered in a health facility, who had attended a four or more antenatal visits, and whose delivery was attended by a skilled attendant were more likely to report attending at least one postnatal care visit. On the other hand, mothers who reported agricultural occupation, and whose partners performed agricultural occupation were less likely to have attended at least one postnatal care visit (23). While a study done in Brazil found that Poorer women, black/mixed, those with lower level of education, single mothers, adolescents, multipara, women who delivered vaginally and those who were not assisted by a physician were less likely to attend postnatal care. Postnatal visits were also less frequent among women who relied in the public sector than among private patients (24).

A study done on the assessment of factors affecting utilization of postnatal care services was conducted in Jabitena district, Amhara regional state (25) found that among the socio demographic factors, the key predictor for PNC utilization that study was educational status of the respondents. A participant whose level of education was secondary school and above showed better utilization of PNC service as compared to illiterate women (25). The major factor predicting postnatal care service utilization was place of delivery that means mothers who delivered their last baby in health institution utilized PNC services when compared with those who delivered at home, mothers who decided by themselves utilized PNC services as compared to those whose health care decision is made by others. In addition, mothers who were knowledgeable to for at least one postpartum obstetric danger sign were utilize PNC service as compared to those who did not mentioned any postpartum obstetric danger sign. The probability of utilizing postnatal care was decreased in mothers who got pregnant for four and above than Prim gravid a women (25).

Another community based study done in northern Ethiopia found that Women who were delivered at health institution were 3times more likely to attend postnatal care services as compared to women who were delivered at home.. Similarly, those women who had knowledge on complication related pregnancy/labor were more likely to utilize postnatal care service as compared to those women who had no knowledge on complication related pregnancyand labor in addition to, Women who had knowledge on postnatal care services were 4.6 times more likely to utilize postnatal care services compared to those women who had no knowledge on PNC services (26).

In view of addressing the determinants of PNC utilization, a study done in southern Ethiopia study found that literacy status of the mother, number of children ever born, and radio listening frequencies were the determinant (27).

According to the Ethiopian national DHS data, different factors contribute for utilization of postnatal care. Women under age 35, women who delivered their first live birth, urban mothers, those residing in Addis Ababa, and mothers with higher levels of education, and those in the highestwealth quintiles were most likely to have received a postnatal checkup in the first two days after childbirth (5).

There are limited published articles in Ethiopia and many developing countries which focused on the prevalence and determinants of post natal care utilization. In particular, there is no study done in Addis Ababa though postpartum period is the very critical period for survival of the neonates and their mother. Concerning the determinants of postnatal care utilization, the available literatures didn't come up with persistent findings. So, this study is going to fill partly the existing gaps concerning PNC.

3. OBJECTIVE

3.1. General Objective

- The prevalence of postnatal care utilization and its associated factors among women who gave birth and attending immunization clinic in selected government health centers in Addis Ababa, 2016.

3.2. Specific Objectives

- To determine the prevalence of postnatal care service utilization among women who gave birth and

attending immunization clinic in selected government health centers in Addis Ababa.

- To identify the associated factors related to postnatal care service utilization among women who gave birth and attending immunization clinic in selected government health centers in Addis Ababa.

4. METHODS

4.1. Study Area and Period

This study was conducted in Addis Ababa, which is the capital city of Ethiopia. In 2008 the total population of Addis Ababa was estimated 3,384,569 with a population growth rate of nearly 2.9% per year (6). More than 50 percent of the health facilities of the country were located in this city(5).The city situated at the heartland of the country and divided in to 10 administrative sub cities and 116 kebele. The health Bureau was responsible for the overall health activity in the city. Medical care was provided by numerous clinics, health centers, hospitals .There were 51 hospitals, out of these 6 hospitals were owned by Addis Ababa administration health Bureau ,5 hospitals' by federal ministry of health,3 by defense and police while the rest were run by private investors and non –profit organizations. There are also around 84 health centers located in the different sub cities. Irrespective of the place of delivery, health centers were primary responsible for provision of primary health care (PHC) in the city. Immunization of children is one of PHC activity that most women visit the health centers for this purpose. There were 10 health centers in Gulele, 7 health centers in Kirkos, 9 health centers in Addis ketema, 7 health centers in Akaki, 9 health centers in Kolfe, 11 health centers in Yeka, 8 health centers in Nafas silk lafto, 9 health centers in Bole, 6 health centers in Lideta and 8 health centers in Arada sub city.Out of the ten Sub cities, one health center in each selected by simple random lottery method.
The study was conducted from April 20 to May 20/2016.

4.2. Study design

Institutional based cross sectional study was conducted.

4.3. Source population

All women who delivered a baby 10 weeks before the survey and those who come for child immunization up to 14^{th} weeks of delivery in Addis Ababa.

4.4. Study population

All selected women, who delivered a baby 10 weeks before the survey and those who come for child immunization purpose up to 14^{th} weeks of delivery at the ten selected health centers in Addis Ababa and fulfill the inclusion criteria.

4.5. Inclusion and Exclusion Criteria

4.5.1. Inclusion Criteria

Women who visited the selected health centers for immunizing their child at $10^{th}$to 14^{th} weeks of postpartum period and gave informed consent

4.5.2. Exclusion Criteria

Those women who had difficulty in communication due to severe mental disorder (problem)

4.6. Sample size determination and sampling technique

4.6.1. Sample Size Determination

Sample size was determined using single population proportion formula using the following assumption:

- P=51.5%, prevalence of post natal care utilization in Addis Ababa (EDHS 2011)
- 95% confidence level
- 5% precision and 10% non-response

$$n=\frac{z(a/2)^2 p(1-p)}{d^2}$$ Where

n= the desirable sample size
Z (a/2) =the critical value at 95% level of significance (1.96)
p=proportion of PN women with PNC utilization
d=precision of measurement (acceptable marginal error)
p=0.515
d=0.05

$$n=\frac{1.96^2 x 0.515 x 0.485}{(0.05)2} = 384$$

After adding a 10% non-response rate (38.4), the total sample size was 422. However, during the study period there were 422 women who fulfilled the inclusion criteria and all invited to participate in the study.

4.6.2. Sampling Technique

The study was conducted in all the ten sub-cities of Addis Ababa to represent all the inhabitants of the city. Out of all health centers in each sub-city, one health center was selected from each sub-city by simple lottery method. The total sample size was proportionally allocated for the 10 health centers based on the six month infant immunization rate of each health center. All eligible women in each health centers invited to participate consecutively during the study period till the required sample size achieved

4.7. Data Collection Tool

Data were collected using structured Amharic interview questionnaire having three parts, the first part containing socio demographic characteristics. The second part of the questionnaire was assessing the reproductive and obstetrics characteristics of the mother. The final part of the questionnaire was asking prevalence of postnatal care utilization.

4.8. Data Collection Procedure

The data were collected by 9 trained data collectors, 3 were midwives and the remaining 6 were nurses. The data collection process was supervised by 3 BSc nurses having previous experience in data collection. On top of that there was continuous follow up and supervision by the principal investigator throughout the data collection period.

4.9. Data Quality Assurance

In order to maintain quality of the data, data collectors and supervisors were trained in data collection procedures. The questionnaire was also been carefully designed and prepared in English language first and then translated in to Amharic by language experts and again the Amharic version translated back to English to make it consistent. Finally, Amharic version was used to collect data. Before actual data collection time the questionnaire (tool) was pretested for validity and reliability on 22 women at Dilfirie health center, there by possible adjustment or modification were made on the tool. The collected data were then reviewed and checked for completeness and consistency by the principal investigator on a daily basis.

4.10. Data Processing and Analysis

The data were checked, cleaned, coded and entered by using Epiinfo 3.5.1 version and exported to Statistical Package for Social Science (SPSS) version 20 statistical software for analysis. Descriptive statistics were computed to determine the proportion of postnatal care service utilization. Bivariate and multivariate logistic regression was computed to assess statistical association between the outcome variable and independent variables using Odds Ratio; significant of statistical association was assured or tested using 95% confidence interval (CI) and p value (<0.05).

4.11. Variables of the Study

4.11.1. Dependent Variable

- ✓ Post natal care utilization

4.11.2. Independent Variable

- ✓ Socio demographic characters :Age, Religion, Ethnicity, Current marital status , Monthly income , Occupation of the partner
- ✓ Maternal reproductive and obstetric factors : Gravida, Para, abortion, Number of alive children, Nature of pregnancy (planned Vs. Unplanned ,supported Vs. unsupported)
- ✓ Distance of health institution Mode of delivery, Place of delivery, ANC utilization, previous postnatal care utilization, length of stay in the facility after delivery.

4.12. Ethical Consideration

Ethical clearance was obtained from the Institutional Review Board committee (IRB) of Addis Ababa University, school of Health Science Department of Nursing and Midwifery Research Ethics Committee. Communication with Addis Ababa City Health Bureau was also made through formal letter obtained from College of Health Science Department of Nursing and Midwifery Addis Ababa University. Permission obtained from medical director of each health center to cascade the research. Participants were informed about the objective of the study. Written consent was obtained from the mothers. In order to keep confidentiality of any information provided by study subjects, the data collection procedure were anonymous. Participation was on voluntary basis and they could withdraw from the study at any time of data collection.

4.13. Operational Definition

Postnatal Care Utilization- women had at least one check up by the health professional after delivery and

within 6 weeks of postpartum coming to the health facility.(Normally women are expected to visit the PN clinic during the first 24 hrs, 3rd day, 7th day, 14th day and 42nd days).

Postnatal Care- refers to the assistance or care given to mother and baby by health workers during the postnatal follow up period such as counsel on baby care, support breastfeeding, maternal nutrition, provide contraception service, and immunize the infant.

5. RESULTS

5.1. Socio Demographic Characteristics of the Participants

A total of 422 women participated in the study with a response rate of 98.3%. Almost half, 187 (44.3%) of the participants were found between the age of 25 to 29 years. The mean age of the participants was 26.7 years (±SD=4.4). 272 (64.5%) of them were orthodox Christian followersand394 (93.4%) of them were married. With respect to level of education only 79(18.7%) of the respondents had college and above education. The average monthly house hold income was 3800 ETB. More than half 242(57.3%) of the participants were using taxi for manse of transportation to the health facilities.

Table1. Socio-demographic characteristics of the Women of Interviewed in selected government Health Centers of Addis Ababa,Ethiopa,2015, (n=422).

Variables	Frequency (no)	Percentage (%)
Age		
<20 years	18	4.3
20-24 years	110	26.1
25-29 years	187	44.3
30-34 years	81	19.2
>=35 years	26	6.2
Religion		
Orthodox Christian	272	64.5
Muslim	92	21.8
Protestant Christian	52	12.3
Others	6	1.4
Ethnicity		
Amhara	148	35.1
Oromo	86	20.4
Tigre	36	8.5
Gurage	111	26.3
Others	41	9.7
Marital status		
Married	394	93.4
Single	17	4
Divorced	11	2.6
Educational status		
No formal education	65	15.4
Primary school	158	37.5
Secondary school	120	28.4
College and above	79	18.7
Paternal educational status		
No formal education	23	5.5
Primary school	124	28.7
Secondary school	149	35.9
College and above	126	29.9
Occupation of participants		
House wife (unemployed)	223	52.8
Employed	199	47.2
Family monthly income**		
<500 Eth Birr	41	10
500-999 Eth Birr	21	5
1000-1499 Eth Birr	38	9
1500-1999 Eth birr	40	9.5
>=2000 birr	282	67.1
Means of transport to Health center		
By taxi	242	57.3
By foot	159	37.7
By your own car	21	5

5.2. Reproductive Characteristics of the Participants

More than 343 (81.3%) of the participants didn't have history of abortion. Half 207(49.1%) of the participants were primigravida and a quarter 201 (26.3%) of the current pregnancy were unplanned. All most all 412(97.6%) respondents had ANC follow up at least one, on top of that more than half 223(53.4%) had four times and above follow up as show below in Table 2.

Table 2: Reproductive characteristics of the Women of Interviewed in selected government Health Centers of Addis Ababa,Ethiopa,2015, (n=422).

Variables	Frequency(no)	Percentage (%)
History of abortion		
Yes	79	18.7
No	343	81.3
Parity		
Para I	207	49.1
Para 2-4	208	49.3
>=5	7	1.6
Nature of index pregnancy		
Planned and supported	311	73.7
Unplanned but supported	100	23.7
Unplanned and unsupported	11	2.6
History of ANC		
Yes	412	97.6
No	10	2.4
Number of ANC visits		
One times	8	1.9
Two times	25	5.9
Three times	154	36.5
Four times	186	44.1
Five and above times	37	8.8
None	12	2.8
Gestational age of index pregnancy		
Term	**359**	**85.1**
Preterm	10	2.4
Post term	53	12.5
Number of pregnancy		
Singleton	405	96
Twin	17	4
Sex of the neonate		
Male	210	49.8
Female	212	50.2
Types of feeding		
Exclusive breast feeding	375	88.9
Formula feeding	47	11.1
APH during pregnancy		
Yes	12	2.8
No	410	97.2
Hypertensive disorders during pregnancy		
Yes	22	5.2
No	400	94.8
PROM and choriamnioties during pregnancy		
Yes	23	5.5
No	399	94.5

5.3. Labor, Delivery and Postpartum Characteristics of the Participants

Institutional delivery among the study participants were 402(96.2%) and vaginal delivery accounts more than three fourth 345(81.7%) of the participants. The mean duration of institution stay before discharge after delivery was 26.7 hrs. (±SD=41hrs.), however the mode is 6 hrs. Nearly half 192(46.4%) of women stay 6 to 11hrs before discharge. Three fourth 321(76.1%) of the participants were given appointment for postnatal care by the health care professionals before discharge. The remaining 101(23.9%) participants were not informed to have postnatal care by the health professionals before discharge from the health institution. Among women who gave birth in the health institution, and 258 (61.1%) of them were advised about any danger signs of postpartum period before discharge.

Table 3: Labor, delivery and postpartum characteristics of the Women of Interviewed in selected government Health Centers of Addis Ababa,2015 (n=422),

Variables	Frequency	Percentages
Place of delivery		
Home	16	3.8
Health center	220	52.1
Government hospital	123	29.1
Private hospital	51	12.1
Private clinic	12	2.9
Delivery attended by		
Midwife(Nurse)	248	58.8
Physician	160	37.9
Traditional birth attendant/family	14	3.3
Mode of delivery		
Vaginal delivery	345	81.8
Instrumental delivery	10	2.4
Cesearn section	67	15.8
Episiotomy/perianal tear during vaginal delivery (N=355)		
Yes	202	56.9
No	153	43.1
Types of caesarean section(N=67)		
Emergency	42	61.8
Elective	26	38.2
Duration of institution stay after delivery*		
< 6hrs	21	5
6-11 hrs	192	46.3
12-23hrs	73	17.6
>=24 hrs	128	30.9
Did you given appointment for postnatal care before discharge		
Yes	321	76.1
No	101	23.9
Appointed within 48 hrs of discharge(N=321)		
Yes	37	11.5
No	316	88.5
Appointment after one week		
Yes	247	76.90
No	74	23.1
Appointed within 2-4 weeks		
Yes	17	5.3
No	305	94.7
Appointed at 6 weeks		
Yes	102	31.7
No	220	68.3
Did you advise for any danger signs before discharge (N=422)		
Yes	258	61.1
No	164	38.9

5.4. Prevalence and Characteristics of Postnatal Care Utilization

The most frequent place of postnatal care were at health centers 199(71.8%) followed by the government hospitals 51(18.4%). The proportion of postnatal care visit across 48hrs of discharge, after one week of discharge and at six weeks of postpartum were 28(10.1%), 199(71.9%) and 143(51.6%) respectively. With regard to the frequency of postnatal care visit, 159(57.4%) of participants had visited once, 112(40.4%) women had two time, and the remaining 6(2.2%) were having three or more. (Table 4)

Table 4 : Prevalence and characteristics of postnatal care utilization of Interviewed women in selected government Health Centers of Addis Ababa,Ethiopa,2015, (n=422),

Variables	Frequency	Percentages
Did you have postnatal care N=422		
Yes	277	65.6
No	145	34.4
Did you have postnatal for the previous delivery, if you gave birth N=224		
Yes	147	65.6
No	77	34.4
Place of postnatal care N=277		
Health center	199	71.8
Gov't hospital	51	18.4
Private hospital	23	8.4
Private clinic	4	1.4
Postnatal care within 48hrs of discharge N=277		
Yes	28	10.1
No	249	89.9
Postnatal care after one weeks of discharge N=277		
Yes	199	71.9
No	78	28.1
Postnatal care at six weeks of postpartum N=277		
Yes	143	51.6
No	134	48.4
Number of postnatal care visit N=277		
One times	159	57.4
Two times	112	40.4
Three times	6	2.2
Did your baby was with you during postnatal care N=277		
Yes	262	94.6
No	15	5.4
Contraceptive use at 14th weeks		
Yes	255	60.4
No	167	39.6
Contraceptive initiation period *		
Before 6 weeks (42 days)	23	9.1
At 6 weeks (42 days)	211	82.7
After 6 weeks	21	8.2

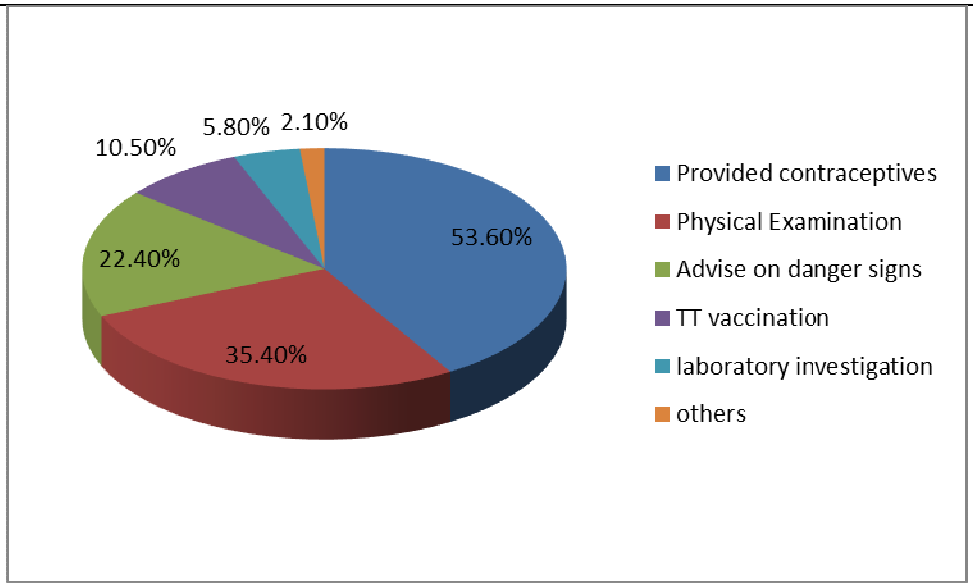

Figure 3.percentage of what was done for the women during their postnatal care visit among all women who had at least one postnatal care visit, n=277

Concerning what was done for the women during postnatal care visit we found that nearly half 53.6% of the respondents provided contraceptives, 35.4% had physical examination, 22.4%advice on danger signs, 10.5% provided TT vaccination, and 5.8%had laboratory investigations (Figure 3).

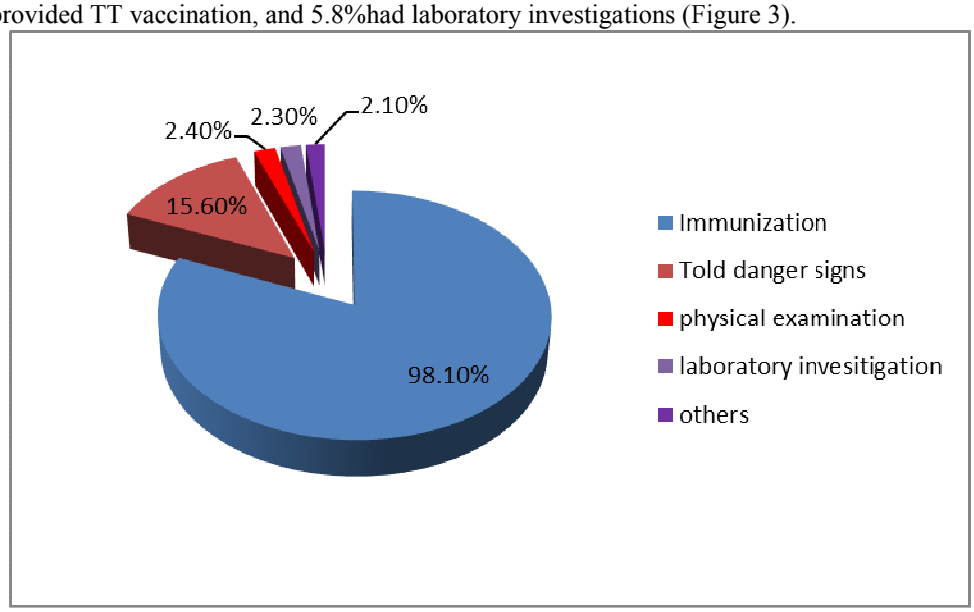

Figure 4. Percentage of what was done for their baby during postnatal care visit among all women who had at least one postnatal care visit n=262

Concerning what was done for the baby as it displayed on **figure 4**, 98.1% of the babies had received immunization, 15.6% of women were counseled about danger signs of their baby, and only 5% of the babies had physical examination and laboratory investigation.

5.5. Associated Factors of Postnatal Care Utilization

During bivariate logistic regression analysis, those variables who had significant association to the dependent variables with P-values of less than 0.2 were entered to multivariate logistic regression. Out of twenty five independent variables categorized under Socio demographic, reproductive and obstetrics, labor and postpartum characteristics, eight variables namely educational status, nature of pregnancy, ANC , place of delivery, whether or not PNC appointment given, whether or not advise on danger signs given by the health care provider , previous history of PNC , and duration of institution stay before discharge had showed association with p-values of less than 0.2. After we entered these 8 variables in to the logistic regression the following four variables; provision of PNC appointment, counseling on danger signs by the health care provider, previous history of PNC, and duration of institution stay before discharge had showed statistical significant association with PNC utilization.

Accordingly, those women who were counseled and given appointment for postnatal care utilization had over thirty two times [(AOR=32.6, 95% CI (14.7-72.3)] more likely to utilize postnatal care than those women who didn't informed by the health care providers before discharge. The odds of having postnatal care visit for those women who were counseled about any of danger signs by the health care providers before discharge were two times more likely to have PNC visit than their counterparts [AOR (1.95, 95% CI (1.05-3.64)]. Similarly those multi parous women who had PNC experience were three times more likely to utilize PNC service for the current delivery than those primi Para women[AOR=2.8, 95% CI (1.36-5.8)]. On the other hand, those multi parous women who hadn't PNC experience were almost 50% less likely to utilize PNC for the current delivery than those primi Para women[AOR=0.43, 95% CI (0.20-0.92)]. Finally, those women who were discharged from the institution after delivery at less than 6 hrs of stay were almost 80% less likely to utilize PNC than those women who stayed more than 24hrs [AOR= 0.22, 95% CI (0.06-0.83)]. (Table5).

Table 5: Logistic regression analysis of factors associated postnatal care utilization of the Women of Interviewed in selected government Health Centers of Addis Ababa, Ethiopia, 2015(n=422).

Variables	Postnatal care use		COR(CI)	AOR(CI)
	yes	No		
Educational status				
No formal education	38	27	0.77(0.39-1.52)	1.56(0.57-4.4)
Primary school	99	59	0.92(0.53-1.62)	1.88(0.8-4.45)
Secondary school	89	31	1.56(0,85-2.9)	2.22(0.92-5.36)
Above secondary school	51	28	1	1
Nature of pregnancy				
Planned and supported	213	98	2.61(0.78-8.75)	1.0(0.17-5.91)
Unplanned and supported	59	41	1.73(0.49-6.04)	0.6(0.01-3.61)
Unplanned and unsupported	5	6	1	1
ANC				
Yes	273	139	2.95(0.82-10.6)	5.93(1.00-30.5)
No	4	6	1	1
Place of delivery				
Home	2	14	**0.07(0.011-.481)**	0.31(0.01-7.63)
Health center	168	52	1.62(0.47-5.58)	1.01(0.16-7.5)
Gov't hospital	66	57	.58(0.17-2.02)	0.59(0.09-4.1)
Private hospital	33	18	.92(0.24-3.47)	0.74(0.10-5.43)
Private clinic	8	4	1	1
Appointment given for PNC				
Yes	**266**	**55**	**39.57(19.85-78.8)**	**32.6(14.7-72.3)****
No	11	90	1	**1**
Women counseled any danger sign on discharge				
Yes	**202**	**56**	**4.28(2.79-6.56)**	**1.95(1.05-3.64)****
No	75	89	1	1
PNC experience in the previous delivery with parity				
Multi Para Yes	**123**	**24**	**3.13(1.85-5.27)**	**2.8(1.36-5.8)****
Multi Para No	**31**	**46**	**0.41(0.24-0.70)**	**0.43(0.20-0.92)****
Primi Para	123	75	1	1
Duration of institution stay before discharge				
<6 hrs	**8**	**13**	**0.3(.12-.78)**	**0.22(0.06-0.83)****
6-11 hrs	134	58	1.13(.69-1.83)	0.81(0.36-1.83)
12-23hrs	48	25	.94(.51-1.72)	0.34(0.13-0.88)
>=24hrs	86	42	1	1

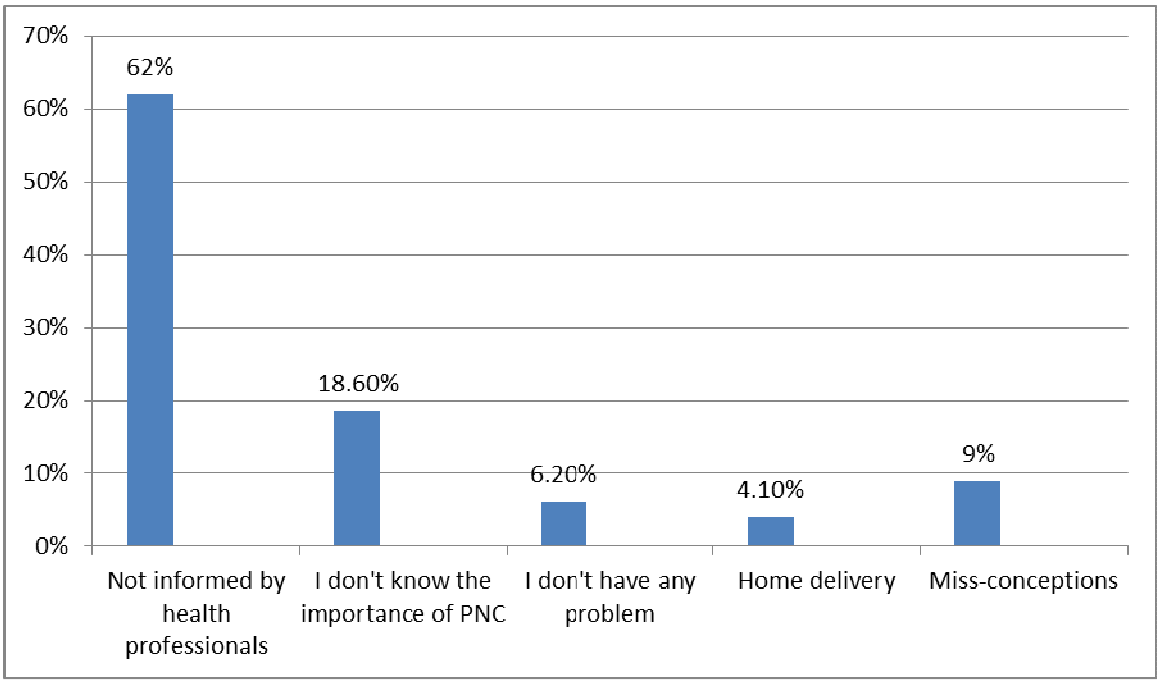

Figure 5. Reasons mentioned for not having postnatal care.

Over all 145(34.36%) of respondents were not using PNC, the major reasons explained by these women were being not appointed by the health care provider 62% and lack of knowledge on the importance of PNC service 18.6%. (Figure 5)

6. DISCUSSION

This study tried to assess the prevalence and associated factors of postnatal care utilization among women who delivered a baby and attending immunization on the 10thand 14th weeks of postpartum at ten selected health centers in Addis Ababa. The health centers were located almost in all sub cites of Addis Ababa. Majority of the socio demographic characteristics of this study participants were more than 2011 EDHS figures of Addis Ababa City (5). Most of the participants in this study were multi parous 208(49.3 %), illiterate 65(15.4%), and 394(93.4%) were married.

This study indicated that two thirds [65.6%] of the participants had received a health checkup after delivery despite the fact that almost all women were given birth at health institution 406(96.2%). But this figure is higher when compared with the 2011 EDHS postnatal care utilization rate of 51.5% and 82.3% of institutional delivery rate respectively (5). This improvement might be due to the time difference and the presence of diverse intervention to improvement in accessing and utilizing maternal health care service. This study finding on PNC prevalence was also higher than three similar studies conducted in Enderta District, Tigray,49.7%)(24), Jabitena District, Amhara Region (20.2%)(25).And southern Ethiopia(37.2%) (27).The discrepancies might be associated with the variation in the study areas and study subjects.

Similarly the postnatal care utilization of this study finding also a bit higher when compared to other studies conducted in African and Asian countries ; the prevalence of not using postnatal care were Bangladesh (73%), Nepal (72%) , Rwanda (71%), Burkina Faso (44%), Cambodia (46%), Haiti (55%), and Kenya (46%) Malawi (41%), Mali (49%), Nigeria (46.5%), Uganda (57%) and Zambia (41%)[20]. However the findings were lower when compared to a study conducted in Brazil (77%) and many other developed countries (16, 17).

Concerning the quality of postnatal care provided by the health professional, we found that about half (53.6%) of the women we provided only contraceptives and less than one in three women received the remaining postnatal care services such as counseling on danger signs, physical examination, and health promotion. similarly, the postnatal care provided to their babies mainly focused on providing immunization (98.1%). The remaining services accounts for less than 20 %. This is also true in a study done in southern Ethiopia (27).

The key associated factors for PNC utilization in our study were PNC appointment given by the health provider, counseling of women on danger signs, history of previous PNC utilization and length of health institution stay before discharge. Women who were counseled and given appointment for postnatal care service were utilized the PNC service over thirty two times [(AOR=32.6, 95% CI (14.7-72.3)] higher than to those women who didn't informed about the PNC service on discharge. This is also supported by the reason given by those women who didn't utilized PNC during this study. Similarly , a study done in northern Ethiopia found that those women who had got information about postnatal care services from HEW and Midwife/Nurse were 24.87

and 37 times more likely to attend postnatal care service respectively compared to those women's who had got information from other sources(25). This finding may leads to a conclusion that the PNC service utilization is strongly influenced by the knowledge of women on postnatal care benefits.

The other major factors predicting postnatal care service utilization was counseling of women about danger sign during the PN period. Those women who were informed about any of the danger signs that occur during the PNC period were two times more likely to utilize postnatal care than their counterparts [AOR (1.95, 95% CI (1.05-3.64)]. This finding was in line with a study conducted in Amhara Region. Mothers who were knowledgeable at least for one postpartum obstetric danger sign were more likely to utilize PNC service as compared to those who did not.(25) .Similar findings also reported from studies conducted in Nepal, and Uganda [31, 32]. This can be explained by the fact that awareness of obstetric danger signs is an important factor in motivating women and their families to attend health care service at the earliest opportunity with the intention of prevention, early detection and getting managed their obstetric danger signs.

The other major factors predicting postnatal care service utilization were previous history of postnatal care utilization and duration of institution stay before discharge. Those women who were discharged from the institution after delivery with less than 6 hrs of stay were almost 80% less likely to have PNC than those women who stayed more than 24 hrs [AOR= 0.22, 95% CI (0.06-0.83)]. Those women who had gave birth before and had PNC were three times more likely to have PNC currently than those women who gave birth only once [AOR=2.8, 95% CI (1.36-5.8)]. This strong positive association of PNC services utilization with previous history can be attributed to the fact that women who had PNC in health institution have greater opportunity to get exposed to health education related to PNC services at the time of visit and thus get access to learn about the types, benefits and availabilities of PNC services during their stay in the health institutions.

Finally, unlike previous studies in Ethiopia (25, 26, 27) which finds that educational status of the participants, having ANC and socioeconomic status of the participants were the determinants of PNC utilization, these factors and others were not the determinant factors of PNC utilization during this study. This could be mainly because the study conducted in the most urban city of the country and almost all women have similar access to information regarding PNC service through media or during their ANC follow up visits.

7. Limitation of the Study

Limitation

- Study design was cross sectional so that cause and effect relationship of variables were difficult to ascertain.
- Use of health professionals as data collectors may create bias as they might direct the respondents during the data collection.

8. CONCLUSION AND RECOMMENDATIONS

8.1. CONCLUSION

The overall prevalence of PNC service utilization in this study was relatively good as compared to the HSDP IV report for Addis Ababa in the 2006 EFY. PNC counseling and provision of appointment, counseling on danger sign, past experience of PNC utilization, and less than 6 hours stay at health institution before discharge were found to statistically significant for the current PNC service Utilization,

8.2. RECOMMENDATIONS

To Health Professionals

- Should be counseled about the danger signs of postnatal period and provided appointment.
- Should be stayed at least for 24 hrs following delivery
- Should give PNC appointment and counsel about danger sign during postnatal period.

To Health Facilities

- Should assure comprehensive and quality of postnatal care services.
- Should give continuous training for health care providers on PNC appointment and counseling about danger sign during Postnatal period

To Health bureau

- Should emphasize the improvement of quality of service PNC utilization.
- Should prepare guide lines on danger sign during Post natal care visit.

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