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# Prevalence and Associated Factors of Postnatal Care Utilization Among Women Attending Immunization Clinic in Health Centers in Hawassa City , Southern Ethiopia,. 2019

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## ABSTRACT

**Introduction:** Postnatal care is a care provided to women and their babies within 42 days after deliveryA large proportion of maternal and neonatal deaths occur during the first 48 hours after delivery, and these first two days following delivery are critical for monitoring complications arising from the delivery World Health Organization (WHO) recommends that after an uncomplicated vaginal birth in a health facility, healthy mothers newborns should receive care in the facility for at least 24 hours after birth. If birth is at home, the first postnatal contact should be as early as possible within 24 hours of birth.

**Objective:** To assess prevalence and associated factors of postnatal care utilization among women attending immunization clinics in health centers, Hawassa city, southern Ethiopia, 2019.

**Methodology:** Institution based cross sectional study design was done. Study was conducted in all health centers .The total sample sizes were 306 women attending immunization clinic at health centers A random sampling technique was employed to select the study subjects. Data collection was conducted from study subjects using pretest questioners. The questioner was developed in English. Ethical clearance was obtained from the research unit of Rift Valley University. Data was entered and analyzed using SPSS version 20 for windows. Frequency distribution table and statically graph were used to describe the variables of interest. The associated factors of postnatal care utilization were identified using bivariate and multivariate analysis.

**Result:** 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)].

**Conclusion:** The overall prevalence of PNC service utilization in this study was relatively good as compared to the HSDP IV report for Hawassa city 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.

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**Keywords:** Postnatal Care, Women, Ethiopia, Immunization

## Introduction

### Background Information

Postnatal care is a care provided to women and their babies within 42 days after delivery [1]. A large proportion of maternal and neonatal deaths occur during the first 48 hours after delivery, and these first two days following delivery are critical for monitoring complications arising from the delivery [2]. World Health Organization (WHO) recommends that after an uncomplicated vaginal birth in a health facility, healthy mother's newborns should receive care in the facility for at least 24 hours after birth. If birth is at home, the first postnatal contact should be as early as possible within 24 hours of birth. At least three additional postnatal contacts are recommended for all mothers and newborns, on day 3 (48- 72 hours), between days 7-14 after birth, and six weeks after birth.

Whereas Federal Ministry of Health (FMoH) of Ethiopia recommends three PNC care visits at 6 hour, 24 hours, 3 days, 6 days and 6 weeks [3].The health of mothers is mostly regarded as an indicator the health of the society [6]. Postnatal care is regarded as one of the most important maternal healthcare services

for the prevention of impairments and disabilities resulting from childbirth [4].

Lack of care during puerperium may result in death or disability as well as missed opportunities to promote healthy behaviors, affecting women, newborns, and children [5]. Millions of mothers more suffer severe illness each year, and unknown numbers are affected with lifelong disabilities [11]. Some of the long-term maternal complications in the postnatal period include chronic pain, impaired mobility, damage to the reproductive system and infertility [6]. Some women suffer genital prolapses after bearing several children. This condition is extremely uncomfortable and can lead to other complications in future pregnancies if not properly addressed in the postnatal period [7]. Ethiopia is one of the countries with high maternal mortality. The MMR was 871 per 100,000 in the year 2000; it was 673 per 100,000 live births in 2005 and 676 per 100,000 in 2011[6]. Maternal deaths represent 30% of all deaths to women age 15-49, compared with 21% in the 2005 EDHS and 25% in the 2000 EDHS.Poor women in remote areas are the least likely to receive adequate health care. This is especially true for regions with low numbers of skilled health workers, such as sub-Saharan Africa and South Asia.

During the past decade, only 46% of women in low-income countries benefit from skilled care during childbirth. This means that millions of births are not assisted by a midwife, a doctor or a trained nurse. Other factors that prevent women from receiving or seeking care during pregnancy and childbirth are: poverty, distance, lack of information, inadequate services, and cultural practices.The level of postnatal care coverage is extremely low in Ethiopia 18 percent. Of this only 13 percent of women received postnatal care within two days, as recommended. Among women who received a postnatal checkup, 8 percent were examined within 4 hours of delivery, 3 percent within 4-23 hours, 2 percent within 1-2 days, and 5 percent within 3-41 days of delivery [8].low coverage of postnatal care in Ethiopia is causing to continuous high maternal and new born morbidity and mortality that affects MDGs 4 and 5 [11]. It is also challenge for planning and implementing of PNC as well as many opportunities are missed low PNC coverage including exclusive breastfeeding, PMTCT, providing of family planning and maternal and new born care [9].The burden of low of postnatal care in Ethiopia is even greater for the large rural population due to poor access and utilization of maternal and new-born health services [10].

**Statement of the Problem**

The World Health Organization (WHO) stated that Postnatal care (PNC) is defined as a care given to the mother and her newborn baby immediately after the birth of the placenta and for the first six weeks of life [9]. It is important because during this period the 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 [11].

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 [12, 11]. In developed countries virtually all women and their infants receive PNC, even though the nature and frequency of this care varies considerably.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 [13, 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 [7]. Despite the fact that no previously done studies existed in the study area (Hawassa , SNNPR, Ethiopia) on factors associated with PNC service, 2014 report indicated that the level of PNC coverage was extremely low in SNNPR (15.4%) and only few (11.1%) of mothers were received PNC service within 48 hours after gave birth. Therefore this study will be conducted for the assessment of prevalence of postnatal service utilization and associated factors in Hawassa city.

**Significance of the Study**

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 studyis planned to identify the possible associated factors for PNC service utilization it is important to make additional studies to describe the magnitude and associated factors of low level of postnatal care utilization. The study will be conducted for the assessment of prevalence of postnatal service utilization and associated factors in health centers in Hawassa city and will be used as baseline data for further research studies. The factors associated with utilization of PNC services still need strong due attention to be researcher so as to improve its utilization and also it is convincing that the available knowledge about the service utilization is insufficient. This study therefore intends to assess these anticipated bottlenecks of PNC service utilization and in addition fill some of the gaps of previously carried out literatures on similar topic with the view of improving utilization of the services.

**Methods and Materials**

**Study Area and Period**

The study was conducted at all health centers in Hawassa city administration. Hawassa city, which is 273 km away from Addis Ababa in the south The Health centers, offers health services including maternal and child health services. Some of these are outpatient, TB/ leprosy, antenatal care, delivery, postnatal care, and family planning services (Hawassa city health office, unpublished). We estimate the number of PNC service users for the previous three consecutive months in 10 health centers of Hawassa city which was 1000(Hawassa city health office, unpublished).The study was conducted from June –July 2019.

**Study Design**
Institutional based cross sectional study was conducted.

**Source and Study Population**
**Source Population**
All women who deliver a baby and attend maternal and child health clinics within six week of delivery in Hawassa city

**Study Population**
All selected women, who delivered a baby and come to maternal and child health clinics at the ten selected health centers in Hawassa city and fulfill the inclusion criteria.

**Inclusion and Exclusion Criteria**
**Inclusion Criteria**
Women who visited the selected health centers at maternal and child health clinics during postpartum period and gave informed consent

**Exclusion Criteria**
Women who had difficulty in communication due to severe mental disorder (problem)

**Sample Size Determination and Sampling Procedure**
**Sample Size Determination**
Single population proportion formula was used to calculate a sample size, by using70% expected magnitude of postnatal care utilization [16].10% Non-response rate were considered.
$N=z^2pq/d^2$
- Where z=1.96(at 95%confidnce interval)
- P=51.4%% (magnitude of postnatal care utilization)
- q=1-0.514=0.486
- d=0.05 degree of accuracy or margin of error

Hence $Ni=z^2pq/d^2$
$Ni= (1.96)^2(0.514)\ (0.486)/\ (0.05)2 =384$
since population is <10,000 we use correction formula
N=384/1+384/1000=278
Nf=278 + 10%(278)=306
Thus by adding 10% none response rate, the final sample size will be 306

Sampling Technique
The study was conducted in all health centers of Hawassa cityto represent all the inhabitants of the city. The total sample size was proportionally allocated for the 10 health centers based on the six month report of maternal and child health clinics client flow of each health center.All eligible women in each health centers were invited to participate consecutively during the study period till the required sample size achieved

**Study Variables**
**Independent variables**
- 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.

**Dependent variable**
- Post natal care utilization

**Data collection tools**
Data was 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 contains asking prevalence of postnatal care utilization.

**Data quality control**
In order to maintain quality of the data, data collectors and supervisors was trained in data collection procedures. The questionnaire wascarefully 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 5% of total sample sizeat yirgalem health center, there by possible adjustment or modification was made on the tool. The collected data was then reviewed and checked for completeness and consistency by the graduate students on a daily basis.

**Data processing and analysis**
The data was checked, cleaned, coded and entered by using Statistical Package for Social Science (SPSS) version 20 statistical software for analysis. Descriptive statistics was computed to determine the proportion of postnatal care service utilization. chi-square test was computed to assess statistical association between the outcome variable and independent variables using Odds Ratio; significant of statistical association wereassured or tested using 95% confidence interval (CI) and p value (<0.05).

**Operational definitions**
**Postnatal Care Utilization**
women had at least one check up by the health professional after delivery 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.

**Ethical considerations**
Permission letter was written by Rift Valley University, department of nursing to health centers. A formal letter, from Rift Valley University was submitted to the head of health centers. Women who attend immunization clinic were informed and requested their permission to conduct the study. The purpose of study were explained to the study subject at the time of data collection and verbal consent were taken from participants .Information obtained was kept confidential

**Results**
**Socio Demographic Characteristics of the Participants**
A total of 306 women participated in the study with a response rate of 100 %. Almost half, 187 (61.1%) 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 (88.89%) of them were orthodox Christian followers and 294 (96.07%) of them were married. With respect to level of education only 79 (25.81%) of the respondents had college and above education. The average monthly house hold income was 3800 ETB. More than half 242 (79.08%) of the

participants were using taxi for manse of transportation to the health facilities.

**Table 1: Socio-demographic characteristics of the Women of Interviewed in Hawassa Health Centers, 2019, (n=306).**

| Variables | Frequency (no) |
|---|---|
| <20 years | 18 |
| 20-24 years | 110 |
| 25-29 years | 87 |
| 30-34 years | 81 |
| >=35 years | 26 |
| **Religion** | |
| Orthodox Christian | 172 |
| Muslim | 92 |
| Protestant Christian | 52 |
| Others | 6 |
| **Ethnicity** | |
| Sidama | 108 |
| Oromo | 46 |
| Tigre | 36 |
| Gurage | 91 |
| Others | 41 |
| **Marital status** | |
| Married | 194 |
| Single | 57 |
| Divorced | 87 |
| **Educational status** | |
| No formal education | 65 |
| Primary school | 98 |
| Secondary school | 64 |
| College and above | 79 |
| **Paternal educational status** | |
| No formal education | 23 |
| Primary school | 66 |
| Secondary school | 109 |
| College and above | 108 |
| **Occupation of participants** | |
| House wife (unemployed) | 163 |
| Employed | 143 |
| Family monthly income** | |
| <500 Eth Birr | 41 |
| 500-999 Eth Birr | 21 |
| 1000-1499 Eth Birr | 38 |
| 1500-1999 Eth birr | 40 |
| >=2000 birr | 166 |

**Reproductive Characteristics of the Participants**

More than 243 (79.41 %) of the participants didn't have history of abortion. Half 207 (67.64%) of the participants were primigravida and a quarter 201 (65.6%) of the current pregnancy were unplanned. All most all 212(69.28%)respondents had ANC follow up at least one, on top of that more than half 223(72.87%) had four times and above follow up as show below in Table 2.

**Table 2: Reproductive characteristics of the Women of Interviewed in Hawassa Health Centers**

| Variables | Frequency( no) |
|---|---|
| **History of abortion** | |
| Yes | 79 |
| No | 243 |
| **Parity** | |
| Para I | 207 |
| Para 2-4 | 92 |
| >=5 | 7 |
| **Nature of index pregnancy** | |
| Planned and supported | 131 |
| Unplanned but supported | 120 |
| Unplanned and unsupported | 55 |
| **History of ANC** | |
| Yes | 252 |
| No | 56 |
| **Number of ANC visits** | |
| One times | 8 |
| Two times | 25 |
| Three times | 154 |
| Four times | 186 |
| Five and above times | 37 |
| None | 12 |
| **Gestational age of index pregnancy** | |
| Term | 159 |
| Preterm | 10 |
| Post term | 53 |
| **Number of pregnancy** | |
| Singleton | 105 |
| Twin | 17 |
| **Sex of the neonate** | |
| Male | 206 |
| Female | 100 |
| **Types of feeding** | |
| Exclusive breast feeding | 275 |
| Formula feeding | 47 |
| **APH during pregnancy** | |
| Yes | 12 |
| No | 210 |
| **Hypertensive disorders during pregnancy** | |
| Yes | 6 |
| No | 300 |
| **PROM and choriamnioties during pregnancy** | |
| Yes | 17 |
| No | 299 |

Labor, Delivery and Postpartum Characteristics of the Participants

Institutional delivery among the study participants were 202( 66.01%) and vaginal delivery accounts more than three fourth 245(80.06%) 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(62.74%) of women stay 6 to 11hrs before discharge. Three fourth 221(72.22%) of the participants were given appointment for postnatal care by the health care professionals before discharge. The remaining 101(33%) 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 (84.31%) 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 Hawassa Health Centers o Hawassa city, 2019 (n=306)**

| **Place of delivery** | |
|---|---|
| Home | 16 |
| Health center | 120 |
| Government hospital | 123 |
| Private hospital | 51 |
| Private clinic | 12 |
| **Delivery attended by** | |
| Midwife(Nurse) | 148 |
| Physician | 60 |
| Traditional birth attendant/ family | 14 |
| **Mode of delivery** | |
| Vaginal delivery | 245 |
| Instrumental delivery | 10 |
| Cesearn section | 67 |
| **Episiotomy/perianal tear during vaginal delivery (N=306)** | |
| Yes | 202 |
| No | 104 |
| **Types of caesarean section(N=67)** | |
| Emergency | 42 |
| Elective | 26 |
| **Duration of institution stay after delivery*** | |
| < 6hrs | 21 |
| 6-11 hrs | 102 |
| 12-23hrs | 73 |
| >=24 hrs | 108 |
| **Did you given appointment for postnatal care before discharge** | |
| Yes | |
| No | |
| **Appointed within 48 hrs of discharge(N=306)** | |
| Yes | 40 |
| No | 266 |
| **Appointment after one week** | |
| Yes | 147 |
| No | 74 |
| **Appointed within 2-4 weeks** | |
| Yes | 17 |
| No | 205 |

**Prevalence and Characteristics of Postnatal Care Utilization**

The most frequent place of postnatal care were at health centers 199(65.03%) followed by the government hospitals 51(16.66%). The proportion of postnatal care visit across 48hrs of discharge, after one week of discharge and at six weeks of postpartum were 28(0.91%), 199(65.03%) and 143(46.73%) respectively. With regard to the frequency of postnatal care visit, 159(51.96%) of participants had visited once, 112(36.60%) women had two time, and the remaining 6(0.19%) 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 Hawassa city, Ethiopa,2019, (n=306)**

| **Variables** | **Frequency** |
|---|---|
| **Did you have postnatal care N=306** | |
| Yes | 161 |
| No | 145 |
| **Did you have postnatal for the previous delivery, if you gave birth N=224** | |
| Yes | 147 |
| No | 77 |
| **Place of postnatal care N=277** | |
| Health center | 199 |
| Gov't hospital | 51 |
| Private hospital | 23 |
| Private clinic | 4 |
| **Postnatal care within 48hrs of discharge N=277** | |
| Yes | 28 |
| No | 149 |
| **Postnatal care after one weeks of discharge N=277** | |
| Yes | 199 |
| No | 78 |
| **Postnatal care at six weeks of postpartum N=277** | |
| Yes | 143 |
| No | 134 |
| **Number of postnatal care visit N=277** | |
| One times | 159 |
| Two times | 112 |
| Three times | 6 |
| **Did your baby was with you during postnatal care N=277** | |
| Yes | 262 |
| No | 15 |
| **Contraceptive use at 14th weeks** | |
| Yes | 255 |
| No | 167 |
| **Contraceptive initiation period *** | |
| Before 6 weeks (42 days) | 23 |
| At 6 weeks ( 42 days) | 211 |
| After 6 weeks | 21 |

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).

**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 weretwo times more likely to have PNC visit than their counterparts [ AOR (1.95, 95% CI (1.05-3.64)]. Similarly thosemulti 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 Health Centers of Hawassa city , Ethiopia, 2019 (n=306)**

| | PNC UTILIZATION | | | |
|---|---|---|---|---|
| **Variable** | **yes** | **No** | **COR (CI)** | **AOR (CI)** |
| 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 | 113 | 88 | 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 | 173 | 99 | 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 | 68 | 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 | 166 | 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 | 102 | 56 | 4.28(2.79-6.56) | 1.95(1.05-3.64)** |
| No | 75 | 89 | | |
| PNC experience in the previous delivery | | | | |
| 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 | 83 | 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 | 84 | 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 |

## 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 14thweeks of postpartum at fiveselected health centers in Hawassa cityMost 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 thattwo 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. Thisstudy 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 thisstudy finding also a bit higherwhen compared to other studies conducted in African and Asian countries ; the prevalence of not using postnatal care wereBangladesh (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 postnatalcares ervicessuchascounselingondangersigns,physicalexamination,an dhealthpromotion. 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 utilizationandlength 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 thatoccur during the PNC period weretwo 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 (25-27) 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 duringthis 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.

## Limitation of the Study

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.

## Conclusion

The overall prevalence of PNC service utilization in this study was relatively good as compared to the HSDP IV report for Hawassa city 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[14-23].

## 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 facility

- 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

**Authors' Contributions**

Kaleab Tesfaye Tegegne,Eleni Tesfaye Tegegne andMekibib Kassa Tessema

was responsible for conceptualization, project administration, software, supervision, and development of the original drafting of the manuscript.

Kaleab Tesfaye Tegegne,, Eleni Tesfaye Tegegne andMekibib Kassa Tessema were participated in methodology, analysisandmanuscript preparation

All authors contributed with data analysis, critically revised the paper, and agreed to be accountable for their contribution.

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**Conflict of Interest**

The author(s) declares no conflict of interest

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