# **Epidemiology**

**KEYWORDS:** post natal care, utilization, mothers

# POST NATAL SERVICE UTILIZATION AND ASSOCIATED FACTORS IN ARBA MINCH ZURIA WOREDA, GAMO GOFA ZONE, SNNPRS, SOUTHERN ETHIOPIA, 2016



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#### **ABSTRACT**

**BACKGROUND:** Postnatal care is a vital element of safe motherhood. It provides an opportunity to assess and treat delivery complications and to advise mothers about the care for themselves and their children. Lack of care in this time period may result in death or disability as well as missed opportunities to promote healthy behaviours, affecting new-borns and children.

**OBJECTIVE:** To assess the magnitude of post natal service utilization and associated factors in Arba minch zuria woreda, Gamo Gofa Zone, SNNPRS, Southern Ethiopia.

**METHOD:** Community based cross-sectional study, which incorporates both quantitative & qualitative research methods was conducted from March, 01/2016 to 30/2016. Structured and pre tested interview- administered questionnaire was used to collect the data for the quantitative study. Simple random sampling technique was used to select 788 women who gave birth in the last one year. Logistic regression analyses, Odds ratios and 95% Confidence interval with p-value <0,05 was computed to determine the presence and strength of association. Qualitative data was collected by using focus group discussion guide and was analyzed by using open code 4.02.

**RESULT:** The study revealed that the level of Post Natal Care service utilizations was 65.5%. The significant factors using logistic regression, showed that occupation (AOR [95% CI]=1.753 [ 1.080, 2.845]), Number of delivery (AOR [95% CI]=1.736 [1.128, 2.673]), Number of Cesarian section delivery (AOR [95% CI]=3[1.802,5.564]), Sources of information (AOR [95% CI]=2.097 [1.083, 4.058]), and place of previous post natal care (AOR [95% CI]=0.409 [0.261, 0.642]) were found to be significantly associated with postnatal care service utilization. Reasons for not to use PNC service was mostly due to far distance from health institution and lack of knowledge.

**CONCLUSION AND RECOMMENDATION:** Although the level of postnatal care service utilization was high compared to study conducted in other places, it is still low to prevent neonatal and maternal death. Occupation, Number of delivery, Number of C/S delivery, Sources of information, and Place of previous PNC were

significantly associated whith postnatal care service utilization. So, health development stake holders should Strengthen provision of information, education and communication with health extension workers as well as to change attitude of health professionals towards a friendly approach.

## **BACKGROUND**

Postnatal period is defined as the first six weeks after birth and is critical to the health and survival of both mother and her newborn. The first two days after childbirth are critical for monitoring delivery related complications (1). Postnatal care is a vital element of safe motherhood. It provides an opportunity to assess and treat delivery complications and to advise mothers about the care for themselves and their children (2).

Globally,Over half a million women die from pregnancy-related causes annually and the vast majority of these deaths occur in developing nations due to the complications from pregnancy and childbirth (3). Most of these deaths occur in sub-Saharan Africa and South Asia (4). More than 60 million women deliver their baby at home each year with the help of traditional birth attendant. Among them more than 500,000 women die each year due to complications of pregnancy and childbirth (5).

Ethiopia is one of the countries in sub-Saharan Africa with markedly high maternal mortality ratio. The maternal mortality ratio (MMR) in the country has stagnated at 676 per 100,000 live births (6). Ten percent of Ethiopian births occur in health facilities, primarily in public sector facilities. Home births are almost twice as common in rural areas (95%) as in urban areas (50%). One in ten births are assisted by a skilled provider (Doctor, nurse, or midwife). Another 28% are assisted by a traditional birth attendant and 57% by untrained relatives or friends (7,8).

The safe motherhood initiative strongly emphasized ensuring the accessibility and use of post natal services & also world health organization estimated that if routine PNC and curative care in the postnatal period reached 90 percent of babies and their mothers, 10 to 27 percent of newborn deaths could be averted. In other words, high PNC coverage could save up to 310,000 newborn lives a year in Africa (9).

Utilization of maternal postnatal care services is affected by a multitude of factors such as demographic characteristics, awareness & knowledge, obstetric history, decision making dynamics, & socio cultural factors (10). These factors increase the

mortality & morbidity of mothers & infants in the postpartum period especially with in one day of delivery (the first day is the time of highest risk for both mother and baby) which is indicated by 18 million women in Africa currently do not give birth in a health facility (9).

Although post natal service utilization, socioeconomic and some obstetric factors have been stated by few studies in other areas of Ethiopia. The magnitude of post natal service utilization and associated factors in Arba minch zuria woreda, Gamo Gofa Zone is not investigated previously. In addition, the studies assessed factors which can only be addressed quantitatively. As a result, cultural factors which can be addressed through qualitative study are not well addressed. Therefore, the purpose of the study was to assess the magnitude of post natal service utilization and identification of factors that influence women's decision to utilize the six week postnatal check up in the study area.

The findings of this study help governmental and non-governmental organizations in planning and implementing programs to reduce maternal morbidity and mortality. In addition, it helps program managers, policy makers, stakeholders, educators and learners, for profession development and health care providers to design appropriate interventions to design appropriate intervantions to promote PNC service utilization by improving the level and quality of postanatal service in the study area.

#### **METHODS**

# Study area and period

Community based cross sectional study which incorporates both quantitative & qualitative research methods was conducted among 788 women in reproductive age group in 9 kebeles out of the 29 kebeles of the Arbaminch Zuria woreda, which is one of the 17 woredas in Gamo Gofa Zone of Ethiopia. All reproductive age group of mothers who gave birth in the past one year in Arba minch zuria woreda was the source population and mothers from selected kebeles who gave birth in the past one year in the selected kebeles of Arba minch zuria woreda was the study population.

The required samples were selected as follows; frist, Arbaminch zuria wereda was selected purposevely from 17 weredas of Gamo gofa zone. Arbaminch Zuria Woreda has 29 kebeles. Among them, 9 kebeles were selected by simple random sampling technique. Then, The study subjects assigned to each kebeles by probability to population size based on the number of women gave birth in the last one year in the respective kebele. Finally, the study subjects were selected by simple random sampling techniques.

# Measurements

**Post natal care utilization:** Those mothers and babies sought to health institution for post natal care services utilization during the first six weeks after six hours of delivery at least ones.

**Postnatal Care:** care for mother and newborn immediately after the childbirth. This care includes any type of medical, mental, emotional and social opportunity to mothers. Information and counseling on infant care and nutrition are provided to mothers.

**Postnatal period:** the time up to 42 days just after the delivery of newborns.

**Skilled Attendance**: Is a service delivery intervention that ensures womens' access to quality care, it ensures that there is availability of skilled attendant and enabling environment of equipment, drugs and transport for referral to emergency obstetric care.

# Data collection tools and process Quantitative Data

For the purpose of data collection an anonymous structured interview administered questionnaire was adopted from similar studies conducted in other areas and modified based on the study

variables and local context. The main contents of the questionnaire was Socio-demographic characteristics, knowledge of major selected post natal services and obstetric history. The questionnaire was prepared in English and translated to Amharic then back to English to check its consistency.

Seven health extension workers were used as data collectors and two BSc midwifes were used as supervisor. Data was collected on daily basis from morning to evening for the period of one month. Both the data collectors and supervisors had given two days intensive training before the actual work about the aim of the study, procedures and data collection techniques going through the questionnaires question by question, ways of collecting the data and clarification was given by investigstor.

#### **Quantitative Data**

Qualitative study was used to complement the quantitative one since it is important to dig out many factors that affects post natal care utilization couldn't be collected through only a quantitative study. For qualitative data, FGDs guide was prepared based on the objectives of the study. Mothers and health extention workers in diffent groups were included in the FGDs. For FGDs, participants who were not included in quantitative study were selected purposively. Nine focus group sessions were conducted based on level of information saturation. Focus group discussions was facilitated by trained same gender moderators and note takers. Ten to fifteen participants were took part in each discussion.

The FGDs was conducted in private and quiet rooms where only the moderator, the note taker and the FGDs participants were present by using tape recorder. The FGD used an open questions followed by possible probing questions. After some common introductory questions, the interviewers were asked the participants' opinions and perception about their knowledge to post natal care and what types of factors that affect them to use post natal care

# Data quality control

The quality of data was assured by pretest and the data was checked for completeness, accuracy, clarity and consistency by the principal investigator and the supervisor immediately after pretest was conducted. The questionnaire and consent documents were first developed in English, then translated into Amharic and finally retranslated into English to check its consistency. To obtain good quality data, training was given for data collectors and supervisors. Finally data was sorted, checked, entered into the computer and cleaned for analysis.

# Data Prosessing & analysis Quantitive data

The collected data was categorized and coded in a well-drafted coding sheet and the data was checked for consistency and completeness. The collected data was entered into a computer using Epi Info 3.5.1 and exported to SPSS Version 20.0. Inconsistent values was double checked against the filled questionnaire and corrected as necessary.

Frequencies were used to see the overall distribution of the study subjects with regard to the variables under the study. The proportions were calculated to explore utilization of post natal care. Bivariate analysis was used to assess the crude association with 95% CI and p-value less than 0.25 to select important variables. Finally, multivariate logistic regression analysis was used to control possible confounders and identify independent predictors of utilization of post natal care and their 95% CI was used to measure the association. A significance level of p-value less than 0.05 was used to decide the significance of statistical tests.

# **Qualitative Data**

The discussions from qualitative data was tape recorded, transcribed verbatim in Amharic, and then translated into English. The texts was coded, categorized and sorted into emergent themes

using open code software version 4.02.

## **Ethical Consideration**

Before conducting the study, ethical clearance and approval was obtained from institutional review board of Arbaminch University college of Medicine and Health Science. Permission to conduct the study was obtained from the Gamo Gofa health bureau and management of the respective community leaders. Verbal informed consent was obtained from the respondents before participation.

#### RESULTS

# Socio Demographic Characteristics of Respondents

From 788 calculated sample size of this study, 758 of participants responded to the questionnaire making response rate of 96.2%. Among them, 40.8% of the study participants' age was between 25 and 29 years. The study findings revealed that 47.5% of the respondents are illiterate and 8.4% are grade 12 and above. About 71.6% of the respondents are house wife. Around 84.4% of the respondents were married. About 47.5% were protestant followers and 80.7% of the respondents are from Gamo ethnic group (table 1).

Table 1.Socio-demographic characteristics of respondents postnatal care utilization among women in Arbaminch zuria wereda, 2016. (n=758).

Variables	Frequency	Percent
Age	17	2.2
15-19	121	16.0
20-24	309	40.8
25-29	193	25.5
30-34	106	14
35-39	12	1.6
40-44		
Educational status	360	47.5
illiterate	133	17.5
Read and write	164	21.6
Primary	37	4.9
Secondary	64	8.4
grade 12 and above		
Ethnic	612	80.7
Gamo	47	6.2
Gofa	17	2.2
hadiya	74	9.8
wolayta	8	1.1
others		
Occupation	543	71.6
House wife	108	14.2
maid servant	37	4.9
Governement	49	6.5
employer	21	2.8
Merchant		
Student		
Religion	351	46.3
Orthodox	47	6.2
Muslim	360	47.5
Protestant		
Marital status	640	84.4
Married	45	5.9
Divorced	73	9.6
Unmarried		

# Reproductive health related characteristics

About 76.9% of mothers had experienced their first pregnancy above the age of eighteen years. About 26% of mothers become pregnant three times and 29.8% of mothers become pregnant once. More than 85.8% of the participants didn't have history of abortion and 87.2% of the participants gave birth by spontaneous vaginal deliver and about 8% were gave birth by instrumental delivery. Ninty six percent of the participants decided or planed by themselves to use post natal care and about 86% of mothers get information from health institution (Table 2).

Table 2.Reproductive characteristics of of respondents postnatal care utilization among women in Arbaminch zuria wereda, 2016. (n=758)

(11-750)		
Variables	Frequency	Percent
Age at first pregnancy	175	23.1
<=18 years	583	76.9
>18 years		
Gravida	213	28.1
One	173	22.8
Two	196	25.9
Three	176	23.2
Four and above		
Para	226	29.8
One	160	21.1
Two	211	27.8
Three	161	21.2
Four and above		
Number of abortion	650	85.8
Zero	67	8.8
One	41	5.4
Two and above		
Number of CS delivery	661	87.2
Zero	97	12.8
One and above		
Number of Episiotomy	636	83.9
Zero	122	16.1
One and above		
Number of instrumental delivery	693	91.4
zero	65	8.6
one and above		
planned to use PNC by her self	731	96.4
Yes	27	3.6
No		
Sources of information	658	86.8
Health institution	59	7.8
Mass media	41	5.4
Relatives		

# Post natal care utilization

The coverage of postnatal care service utilization in the last delivery was 65%. Of these, 30% were used PNC within 2 days of postpartum and about 41.5% within 1hr of delivery. Among those who got post natal care follow up, most of them (55.9%) were used once. Health education topics which are given at PNC were mostly; Contraception (54.9%), Child care (26.5%) and Breast feeding (16%) (Table 3).

Table 3. Post natal utilization of respondents among women in Arbaminch zuria wereda, 2016. (n=758).

Variables	Frequency	Percent
Utilization of PNC on the last delivery		
Yes	493	65.0
No	265	35.0
Time of PNC		
Within one hour of delivery	205	41.5
Within two days of delivery	148	30
Within six weeks and above	140	28
Number of PNCf/up		
Once	276	55.9
Twice	146	29.6
Three times	52	10.5
Four times and above	27	0.05
Place of previous PNC utilized		
Hospital	34	4.5
Health center	157	20.7
Health post/clinic	151	19.9
At home	416	54.9

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Reason for selection of the institution		
Not far from home	127	16.8
Free cost	356	47.0
Good h/proff behavior	54	7.1
24 hr serve	43	5.7
Good quality work	114	15.0
Other	10	1.3
Health education given at PNC		
Contraception	271	54.9
Child care	131	26.5
Breast feeding	79	16
I do not remember	12	12

## Reasons for not to utilize Post natal care

About 35% of respondents answered their reason for not to use PNC service were due to far distance from health institution, (29.8%) lack of knowledge and (22.6%) due to far distance, cost of health service, and cultural issue

In FGD groups, a 29 years old mother said "we did not know the importance of checkup for our baby and ourselves after delivery unless complication appears and we assume as it needs a cost". Participants of the focus group discussion were asked to share their ideas regarding the reason why most women do not utilize post natal care, and most of them responded as, women sent back to their home to stay there after they reach health centers for delivery until labor progresses and this lets most mother home delivery which makes them distrustful and stays at home than seeking PNC after delivery."....Ihave two babies. The first baby was born at home and the

second was at health center. For the second baby while I went to health center they sent me back to my home 2 times for the sake of inadequate labour plus they have no good behavior" says 34 years old; mother of two children.

A 26 years old mother who gave her first birth 11 months ago said ".... I delivered a healthy baby in Arbaminch hospital. While I get off from hospital after delivery I said to health professionals as I will come back if any complication arises. But they said to me as I should go to nearby health center for anything"

A 27 year old mother who didn't gave birth at health institution said "...as far as my baby was healthy, my husband could not allow me to go to health facility due to work load in home and out of home".

During FGD health extension workers also participated as respondents and they blame mothers and health professionals. "...most of the time they use health service while problem arise, during delivery, during pregnancy and vaccination. They didn't come until their baby or them self's got a disease plus while weeducate them to use PNC visits, they did not hear us. As we heard from mothers, health professionals' also shows unnecessary behavior while the mothers gave birth at health institution which prevent the mothers not come back again to visit for post natal care"

## Factors associated with Postnatal Care Utilization

In multivariate logistic regression analysis; occupation, Number of delivery, Number of C/S delivery, sources of information and Place of previous PNC were found to be significantly associated with postnatal care service utilization (Table 4).

Table 4. Multi-variable analysis result for factors affecting PNC service utilization of respondents in Arbaminch zuria wereda, 2016.

Variables	Category	PNC utiliz	PNC utilization		AOR(95%CI)		
		yes	yes No				
Age	15-19	14	13	1			0.064
	20-24	78	33	0.258	(.062,	1.083)	0.051
	25-29	200	109	0.249	(0.062,	1.007)	0.058
	30-34	125	68	0.255	(0.062,	1.049)	0.055
	35-39	62	31	0.241	(0.056,	1.030)	0.075
	40-44	14	11	0.137	(0.021,	1.873)	
Educational status	Illiterate	228	132	1			0.363
	Read and write	97	36	1.261	(0.765,	2.078)	0.366
	Primary	102	62	0.818	(0.529,	1.264)	0.924
	Secondary	22	15	0.963	(0.445,	2.084)	0.816
	Grade 12 and above	44	20	1.086	(0.543,	2.171)	
Ethnicity	Gamo	385	227	1		-	
	Gofa	31	16	1.025	(0.530,	1.982)	0.941
	Hadiya	15	2	4.246	(0.902,	19.995)	0.067
	Wolayita	56	18	1.483	(0.817,	2.692)	0.195
	others	6	2	2.136	(0.388,	11.766)	0.383
Occupation	House wife	346	197	1			1
	maid servant	74	34	1.753	(1.080,	2.845)*	0.023
	G/ment employer	25	12	1.145	(0.538,	2.435)	0.725
	Merchant	38	11	2.958	(1.360,	6.432)*	0.006
	Student	10	11	0.481	(0.189,	1.221)	0.124
Number of pregnancy	one	133	80	1			0.548
, , ,	Two	120	53	1.244	(0.611,	2.535)	0.437
	Three	132	64	0.725	(0.323,	1.630)	0.666
	Four and above	108	68	0.869	(0.460,	1.642)	
Number of delivery	One	138	88	1			0.050
	Two	109	51	1.607	(1.001,	2.581)	0.012
	Three	145	66	1.736	(1.128,	2.673)*	0.235
	Four and above	101	60	1.320	(0.835,	2.088)	
Number of CS delivery	zero	417	244	1			0.001
·	one and above	76	21	3.167	(1.802,	5.564)*	
Number of Instrumental delivery	Zero	443	250	1			0.313
	One and above	50	15	1.415	(0.721,	2.776)	
Sources of information	Health institution	426	232	1			0.028
	Mass media	46	13	2.097	(1.083,	4.058)*	0.143
	Relatives	21	20	0.612	(0.317,	1.181)	
Place of previous PNC	Hospital	19	15	1			0.159
•	Health center	89	68	0.578	(0.270,	1.240)	0.001
	Health post/clinic	108	43	0.409	(0.261,	0.642)*	0.753
	At home	271	134	1.076	(0.683,	1.694)	

\*=significant association at P-value of < 0.05.

Occupation showed strong statistical association with postnatal care service utilization. Mothers who were maid servants were about 1.7 times more likely to utilize postnatal care than those who are house wife (AOR [95% CI] =1.753 [1.080, 2.845]). Similarly, Mothers who were merchant were about 2.9 times more likely to utilize postnatal care service than house wife mothers (AOR [95% CI]=2.958 [1.360, 6.432]). Parity has also been an important predictor of postnatal care service utilization. Mothers who gave birth three time were about 1.7 times more likely to utilize Postnatal care service utilization than those who gave birth once (AOR [95% CI] = 1.736 [1.128, 2.673]). Postnatal care service utilization also increased with increasing number of caesarian section delivery. Mother who gave birth by caesarian section were about 3 time more likely to utilize postnatal care service than those who gave birth through spontaneous vaginal delivery (AOR [95% CI] = 3 [1.802,5.564]). Postnatal care service utilization was highly associated with sources of information. Mothers who got information from mass media were about 2 times more likely to utilize postnatal care service than those who get from others sources (AOR [95% CI] = 2.097 [1.083, 4.058]). Place of previous PNC was also significantly associated with utilization of post natal care. Mothers who got previous PNC at Health post/clinic were about 60% less likely to utilize Postnatal care service than those who got previous PNC at hospital (AOR [95% CI] = 0.40[0.261, 0.642]).

## **DISCUSSION**

The study revealed that postnatal care service utilization was 65.5%. This was significantly higher than the previous reported at Nepal 25.1%, Kenya 14.2%, Malawi 30%, and In 2011 EDHS, 7% of women received a postnatal checkup within two days of delivery. Accordingly, 12.8% of the women who had a live birth in the five years preceding the 2011 survey reported to have had PNC. The number of postnatal checkup in the first two days after birth were significant in Amhara (from 5.1% in 2011 to 6.4% in EDHS 2014), Oromiya (from 5.0% to 11.4%), and Addis Ababa (from 47.7% to 70.1%) (2, 6, 7). The coverage of the finding also higher tthan study done in some different district places of Ethiopia, in Jabitena district Amhara region is 20.2% (11), Gondar Zuria District, Amhara region 66.8% (12), Abi-Adi Town, Tigray 11.9% (13) and sidama, SNNPR is 37% (14). This might be due to the time gaps between those studies and improvement in accessing and utilizing health care service through time.

This study found that some socio-demographic and obstetric related factors were associated with the woman having postnatal care service utilization. Occupation, Number of delivery, Number of C/S delivery, Sources of information, and Place of previous PNC were significantly associated with postnatal care service utilization. This study showed that mothers who were maid servant were about 1.7 times more likely to utilize postnatal care service than those who are house wife. Similarly, Mothers who were merchant were about 2.9 times more likely to utilize postnatal care service than house wife women.

Parity is also a significant factor in this study. Mothers who gave birth three times were about 1.7 times more likely to utilize postnatal care service utilization than who deliver once. This finding contradict with the study done at Jabitena district, Amhara region that indicates the odds of having four and above children decreased the chance of utilizing postnatal care service by about four fold more likely than having one pregnancy (11). As well, in sidama Ethiopia, Parity, the number of children ever born, is strongly associated with health seeking behavior (14). This might be due to those mothers who have high parity may be experienced from their previous delivery as complication may arise and wants to check up for PNC than primipara.

Postnatal care service utilization also increased with increasing number of caesarian section delivery. Mothers who gave birth by caesarian section were about 3 times more likely to utilize postnatal care service than those who gave birth vaginally. This might be due to experience of previous complication and fear for the future.

Postnatal care service utilization was highly associated with Sources of information. Mothers who got information from mass media were about 2 times more likely to utilize postnatal care service than those who get from health institution. This finding is similar with the study conducted in Sidama zone; in which those mothers who never listened to radio were 24.3 percent less likely to use PNC services (14)

Place of previous PNC was also significantly associated with utilization of post natal care. Mothers who got previous PNC at Health post/clinic were about 60% less likely to utilize postnatal care service utilization than who got previous PNC at hospital. This is similar with the study done in in Jabitena district Amhara region, Mothers who gave birth their last child in hospital were about 4 times more likely to utilize postnatal care service utilization than other place (11).

Regarding to those respondent mothers who did not attend PNC services as indicated by the respondents were due to far distance from health institution (29.8%) followed by lack of knowledge (22.6%) and others due to far distance, cost of health service, and cultural issue. Using FGD, participants raised the most frequently reasons for not attending PNC services like lack awareness, previous experience at home, and unnecessary health professional's behavior at health institution. Another important factor which was mentioned in the focus group discussion (FGD) was that, most mothers assuming that the PNC services would be given while complication arise and as far as they are healthy they did not seen the importance of going to health institution. The other important reason which was indicated by FGD participants was lack of willingness and unfriendly approach by some health professionals in rendering appropriate maternal health service including Deliver and PNC services that may lead mothers not to attend or not to come back for PNC and other services. This finding is similar with the study conducted in Gondar ,in which, the most frequently cited reasons for not using PNC by the FGD discussants were believing that the treatments were not important unless mothers feel sick, negative experiences of women with the care, and considering the service accessible only for the child (12).

# Limitation of the study

- Respondents may unable to recall some of the events.
- Cross sectional study design which made the findings impossible to establish causal relationship between the outcome and exposure variables.

# **CONCLUSION**

The study revealed that even though the level of postnatal care service utilization was high compared to study done in other places previously, it is still low to prevent neonatal and maternal death. Occupation, Number of delivery, Number of C/S delivery, Sources of information, and Place of previous PNC were significantly associated factors which affect postnatal care service utilization. About 35% of respondents, who did not utilize post natal care, gave their reason as due to far distance from health institution and lack of knowledge. Using FGD, participants raised the most frequently reasons for not utilizing PNC services were lack of awareness, previous experience of delivery at home and unnecessary health professional's behavior at health institution.

# Recommendation

Based on the findings of this study, the following recommendations were made.

Regional health buareau, zonal health office and other health development stake holders working in the area of maternal health should;

 Strengthen provision of information, education and communication through health extension workers by going home to home.

- Offer more health promotion about PNC visits during ANC especially for those primipara or first pregnancy.
- Make Regular supportive supervision and monitoring of the service should be implemented
- Give awareness for those health professionals, who are doing in Hospitals to strengthen them in educating mothers and giving a care during delivery and PNC as well as to change towards a friendly approach.

# **Competing interests**

The authors declare that they have no competing interests.

# **Authors' Contribution**

KB wrote the proposal, participated in data collection, analyzed the data and drafted the paper. GK, KD and AS approved the proposal with great revisions and revised subsequent drafts of the paper. All authors contributed in the designing of the methodology and write-up. All authors read and approved the final manuscript.

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