

Mothers' Utilization Of Antenatal Care And Their Satisfaction With Delivery Services In Selected Public Health Facilities Of Wolaita Zone, Southern Ethiopia:

Bereket Yohannes, Mulat Tarekegn, Wondimagegn Paulos

Abstract: - Background: A woman's utilization and satisfaction with the delivery service may have immediate and long-term effects on her health and subsequent utilization of the services. Providing satisfying delivery care increases service utilization. This study was to assess Utilization of Antenatal Care for recent pregnancy and satisfaction with delivery service in Wolaita zone.

Methods: A facility based cross-sectional survey with exit interview was conducted in Wolaita Zone. 363 postpartum mothers were enrolled in the study. Client satisfaction was measured using a survey instrument adopted from the Donabedian quality assessment framework. Multivariate and binary logistic regression was applied to identify the relative effect of each explanatory variable on the outcome (satisfaction).

Results: The proportion of mothers who had at least a visit to ANC Check up was 85.7%. The overall level of satisfaction with delivery care was 82.9%. Middle aged (20-34) postpartum mothers were more (AOR =2.55(95% CI: 1.11,5.90) likely to be satisfied when compared to their 35-49 counter age groups where the later might have no/wrong experience with the delivery service. Mothers with some level of high school education (9-12) were at higher chance (AOR= 4.46 (95% CI: 1.63, 12.18) to be satisfied with the service in comparison with higher level of education as it might show higher demand of the more educated group or there may be underestimation of safe delivery . Women who stayed on labour pain for less than a sunset were in their above three times higher likelihood on their level of satisfaction when compared to their longer on labor counter mothers (AOR= 3.31(95%CI: 1.53, 7.17).

Conclusion: Self reported utilization of ANC service and satisfaction with delivery care given to them is promising. ANC can help for better utilization of institutional delivery. Care providers should plan for more institutional delivery by extending their acceptance in the already visiting ones. Mothers who happened to visit health facility for delivery attendance can be good promoters for institutional delivery as peer mothers to advocate the service.

Keywords: - Antenatal Care, Client Satisfaction, Donabedian model, Exit Interview, Institutional delivery, mothers, Utilization, Wolaita Sodo University

Background

Worldwide over half a million women die as a result of childbirth or complication due to pregnancy. Almost all or 99% of these deaths occur in developing countries (1, 2). There are also disabling complications including obstetric fistulas, ruptured uterus and pelvic inflammatory diseases (3). Around 80% of causes of maternal death are direct causes. Severe bleeding usually occurring after the mother gave birth is the single most feared complication claiming the life of most mothers (4). More than a million children lose their mothers each year due to maternal mortality. This comprises 37% of deaths among under-five children. (5, 6). There is historical evidence that indicate the significant positive changes that can be observed when certain interventions are in place for maternal health care (7,8).

Safe motherhood initiative recommended the importance of access to quality maternal healthcare services and the need of presence of skilled professional at every delivery.(9). The MDG has the aim of reducing maternal mortality ratio by two third and achieving universal coverage of reproductive health by 2015. Skilled attendant at delivery has on improving maternal health outcomes.(9, 10) ANC service is important as it offers pregnant women an opportunity to get different services (11, 12). Deaths due to the other common causes of maternal death like sepsis, hemorrhage and obstructed labour started to decrease during the 20th century. (11,13). A focused ANC model in addition to its direct contribution to better health can also contribute to safe delivery (14, 15) The ANC utilization has increased more than 20% in all the regions of the world except the sub-Saharan regions where only 4% increase was noted.(16,17) Studies reported that a mother's positive perception of birth experience has been linked to positive feelings toward her infant and adaptation to the mothering role (18, 19, and 24). ANC utilization coverage is not high in Ethiopia. Those even have ANC follow up attend delivery at home though Safe delivery service is a single most important area that actions and interventions should address in all rounds to achieve the MDGs concerning maternal health. There is a need to identify some areas of disparity in this regard where the findings can guide to design appropriate package. Hence this study aims assessing utilization of ANC and level of satisfaction of mothers' with delivery service in selected public health facilities of Wolaita Zone, Southern Ethiopia.

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Methods and materials

Study area and period: Wolaita is one of zonal administrations in Southern region of Ethiopia with 274,978, Women in reproductive age group 342,666, pregnant women 68,040 and children under five years of age.

Study design: A descriptive cross-sectional study

Sample and population

Source population: Mothers' who got delivery care in the selected public health facilities

Study population: Mothers' who gave birth to in that selected public health facility in that specific data collection period (May 10 to June 20, 2012).

Sample size determination: Sample size is determined using the following single population proportion formula:

$$n = \left(\frac{Z_{\frac{\alpha}{2}}}{d} \right)^2 p(1-p)$$

n is the required minimum sample size for infinite population is margin of error which is 5% **p** is expected level of satisfaction among mothers which is taken as **61.9%(23)**

$Z_{\frac{\alpha}{2}}$ is the reliability coefficient at confidence level of 95% taken as **1.96**. Then the final sample size was found to be **363** postnatal mothers exiting from the selected health facilities.

Sampling technique and procedure: The total sample was allocated proportionally to each of the 13 health facilities with EMOC. Data were collected from every postnatal woman who received delivery care in those health facilities till the proportional sample for each facility was satisfied.

Data collection Health Professionals not working in and around that facility were selected as data collectors for 40 days (May 10 to June 20, 2012)

Variables

Dependant variables

- Mothers' self reported utilization of ANC for current pregnancy
- Mothers' satisfaction with delivery service

Independent variables

- Socio-demographic characteristics
- Obstetric characteristics (time)
- Knowledge related to ANC
- Information related to recent pregnancy
- Health facility related characteristics

Operational definitions

- **Level of satisfaction with current delivery service**
 - **Satisfaction:** the responses 'very satisfied' and 'satisfied' were classified as **satisfied and** responses 'very dissatisfied', 'dissatisfied' and 'neutral' as **unsatisfied**. Neutral responses were classified as dissatisfied considering that they might represent a fearful way of expressing dissatisfaction represent a fearful way of expressing dissatisfaction. This is likely because the interview is undertaken within the health facilities and mothers might be reluctant to express their dissatisfaction feeling of the services they received.
 - **Overall satisfaction level:** 75% response of the thirteen satisfaction indicator items were categorized under "satisfied" and those who were satisfied in less than 75% of the items were categorized as "unsatisfied" (23).
 - **Utilization of ANC:** having at least one visit of health institution for check up purpose during the last pregnancy.

Data quality Control: The questionnaire was pretested in 5% . Data collectors were given training and supervision was made. Data was cleaned up by Epi-Info and then transported to SPSS for further analysis.

Data processing and analysis: Data was analyzed using SPSS version 16 (SPSS Inc., Chicago). Descriptive statistics were computed for the study variables. Bivariate binary logistic regression and multivariate logistic regression were applied. Adjusted odds ratio was used to determine the strength of association between selected variables

Ethical consideration: Ethical clearance was obtained from Wolaita Sodo University Research Ethical Review Committee. The questionnaire contains no names and anything that can identify the study participants. Informed consent was obtained from the study participants and they were disclosed as it is their right to participate or not.

Result

Socio-demographic characteristics: Among 363 postpartum mothers from thirteen public health facilities (one hospital and 12 health Centers) participated in the exit survey 317(87.3%) were in age group 20-34 and 354 (97.5%) were either married or living together with partner. Amongst the study participants 55(15.2%) had no formal education. Majority of the study participants had no job of their own. (table1).

Table 1 Socio-demographic characteristics of mothers delivered in public institutions, Wolaita Zone, 2012.

Characteristics (n=363)		Number	Percent
Age in years	<20	14	3.9
	20-34	317	87.3
	35-49	32	8.8
Marital status	Married/living together	354	97.5
	Single	7	1.9
	Divorced/widowed	2	0.6
Religion	Protestant	249	68.6
	Orthodox	95	26.2
	Islam	10	2.8
	Other	9	2.5
Ethnicity	Wolaita	318	87.6
	Amhara	15	4.1
	Guragie	9	2.5
	Other	21	5.8
Education	No formal education	55	15.2
	1-8 completed	140	38.6
	9-12 completed	99	27.2
	Above 12	69	19.0
Your occupation	Housewife	196	54.0
	Merchant	57	15.7
	Gov employee	63	17.4
	Student	32	8.8
	Other	15	4.1
Average monthly income (Birr)	<500	75	20.7
	500-1500	143	39.4
	>1500	145	39.9
Residence	Rural	172	47.4
	Urban	191	52.6
Availability of transportation	Yes	213	58.7
	No	150	41.3
Availability of functional radio	Yes	226	62.3
	No	137	37.7

Obstetric characteristics

For 153 (42.1%) of women, this was the first delivery and 5.2 % of women had had more than 5 deliveries. Nearly a quarter of women had had an unwanted birth. Over 3/4th of women 294 (81%) had visited the facilities for delivery plan.

Thirty seven (10.2%) of the study participants did have at least a single episode of previous newborn death, about a quarter had at least a history of previous still birth and 44(12.1%) did face previous abortion. 177(48.8%) stayed on labour above 12 hours (Table 2).

Table 2 Obstetric characteristics of mothers delivered in public health institutions, Wolaita Zone, 2012

Characteristics (n=363)		Number	Percent
Age (in years) at first marriage*	<18	39	11.0
	>=18	317	89.0
Age (in years) at first pregnancy	<18	17	4.7
	>=18	346	95.3
Parity (including the new baby)	One	153	42.1
	Two to five	191	52.6
	More than five	19	5.2
Reason for this visit	Planned delivery	294	81
	Referral delivery	69	19
Is the current pregnancy planned	Yes	319	87.9
	No	44	12.1
Mode of delivery	Spontaneous vaginal delivery	157	43.3
	Assisted delivery	171	47.1
	Caesarean section	35	9.6
Immediate maternal condition after delivery	Normal	282	77.7
	With complication	81	22.3
Fetal outcome	Live birth	333	91.7
	Still birth	30	8.3
Ever had neonatal death	Yes	37	10.2
	No	326	89.8
Ever had still birth	Yes	60	16.5
	No	303	83.5
Duration of last delivery			
	<12 hrs	186	51.2
	12-24 hrs	122	33.6
	>24 hrs	55	15.2
Number of delivery in the last five years	One	255	70.2
	Two	91	25.1
	More than two	17	4.7
Number of abortions	Zero	318	87.6
	One	44	12.1
	Two	1	0.3

Knowledge and practice related to ANC

Among study participants 343(94.5%) know at least the service provision. Health center was reported by about 261(83.9%) of mothers as a place for ANC visit. Some

311(85.7%) Postpartum mothers in this study self-reported about at least a single visit for ANC follow up during their recent pregnancy where more than half 166(53.4%) had four or more visits, (Table 3).

Table 3 Knowledge and practice related to ANC of mothers delivered in health institutions in Wolaita Zone, 2012.

Variables		Number	Percent
Know ANC service is available?	Yes	343	94.5
	No	20	5.5
Know ANC service has advantage?	Yes	332	91.5
	No	31	8.5
Know ANC helps to detect & treat problems during pregnancy?	Yes	315	86.8
	No	48	13.2
Know ANC helps to be informed about place of delivery?	Yes	311	85.7
	No	52	14.3
Know ANC helps to check the condition of the fetus?	Yes	323	89.0
	No	40	11.0
ANC follow up for recent pregnancy (n=363)	Yes	311	85.7
	No	52	14.3
No. ANC visit for recent pregnancy (n=311)	1	13	4.2
	2-3	132	42.4
	>4	166	53.4
Self reported GA Time at first visit for the recent pregnancy (n=311)	1 st trimester	42	13.5
	2 nd trimester	211	67.8
	3 rd trimester	58	18.6
Place for the last ANC visit (n=311)	Health center	261	83.9
	Hospital	27	8.7
	Private clinic	2	0.6
	Health post	20	6.4
	Home	1	0.3
Attendant for the last ANC visit	HO/BSc nurse	17	5.5
	GP/Specialist	23	7.4
	Midwife/nurse	250	80.4
	HEW	20	6.4
	TBA	1	0.3
Information given during ANC to deliver in Health facility (n=310)	Yes	286	92.3
	No	24	7.7
TT vaccine given during recent pregnancy	Yes	277	89.1
	No	34	10.9
No. of TT vaccine in ANC (n=277)	One	81	29.2
	Two	173	62.5
	≥three	20	7.2
TT vaccine given in other outreaches (n=311)	Yes	92	29.6
	No	219	70.4
No. of TT vaccine given in other outreaches	1	63	68.5
	2	27	29.3
	3	2	2.2
Any TT vaccine before the recent pregnancy(n=363)	Yes	244	61.7
	No	139	38.3
No. of TT vaccine before the recent pregnancy (n=225)	1	102	45.3
	2	82	36.4
	3	31	13.8
	4	3	1.3
	5	7	3.1

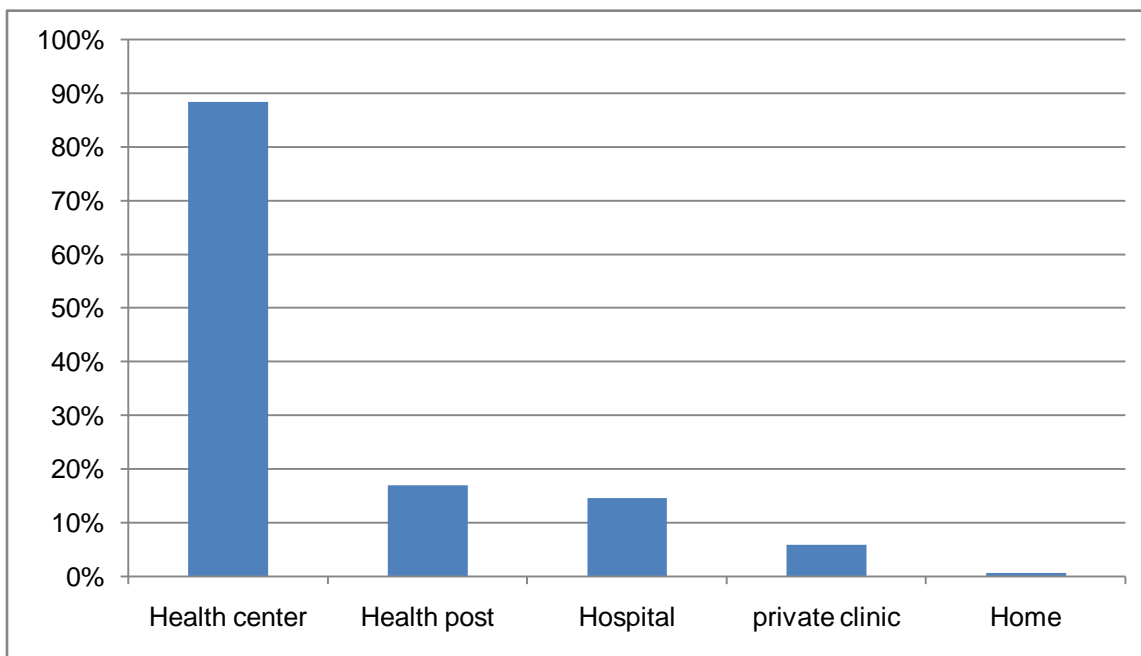


Figure 1 Place for ANC visit as reported by mothers in Wolaita Zone, 2012.

NB. The sum of percentages exceeds 100% as multiple responses were possible

Levels of Satisfaction

The proportion of mothers who were satisfied with delivery care in this study was 301(82.9%).where as for

dissatisfaction Health facility distance 134(36.9%) and access and/or cleanliness of toilet 132(36.4%) were the first two with higher scores.

Table 4 Dimensions of care and satisfaction scores by mothers delivered in Public health institutions in Wolaita Zone, 2012.

Care dimensions (n=363)		Number	Percent
Examination area cleanliness	Satisfied	335	92.3
	Unsatisfied	28	7.7
Waiting time to see health worker	Satisfied	319	87.9
	Unsatisfied	44	12.3
Courtesy and respect	Satisfied	344	94.8
	Unsatisfied	19	5.2
Information and education service	Satisfied	337	92.8
	Unsatisfied	26	7.2
Overall cleanliness of the facility	Satisfied	291	80.2
	Unsatisfied	72	19.8

Completeness of information	Satisfied	331	91.2
	Unsatisfied	32	8.8
Access and cleanliness of toilet	Satisfied	231	63.6
	Unsatisfied	132	36.4
Confidentiality and trust in providers	Satisfied	339	93.4
	Unsatisfied	24	6.6
Availability of drugs and supplies	Satisfied	317	87.3
	Unsatisfied	46	12.7
Waiting area cleanliness and comfort	Satisfied	297	81.8
	Unsatisfied	66	18.2
Cost paid to service	Satisfied	318	87.6
	Unsatisfied	45	12.4
Health facility distance	Satisfied	229	63.1
	Unsatisfied	134	36.9
Level of privacy during delivery	Satisfied	336	92.6
	Unsatisfied	27	7.4
Overall delivery care	Satisfied	301	82.9
	Unsatisfied	62	17.1

Factors Association with satisfaction: The bivariate analysis showed association with age, and educational status among socio-demographic variables (Table 5). Some obstetric characteristics were also associated with overall satisfaction (Table 7). Study participants Knowledge on ANC advantage was found to be associated with their degree of satisfaction with safe delivery service in health facilities in some cases (Table 8). Multivariate analysis depicted the association of age, educational status, and duration labor with overall satisfaction of postpartum mothers with the delivery service they had where as the association between knowledge of mothers on ANC benefit to be informed about where to attend their delivery and overall satisfaction of them on the service they got disappeared (Table 9).

Table 5 Association of Socio-demographic factors with satisfaction, Wolaita Zone, 2012.

Factors	Satisfaction			COR (95%CI)
		Satisfied	Unsatisfied	
Age*	<20	10	4	1.3(0.3, 5.2)
	20-34	270	47	3.0(1.4, 6.6)
	35-49	21	11	1.00
Monthly income in birr	<500	62	13	0.95(0.45, 1.99)
	500-1500	118	25	0.94(0.51,1.73)
	>1500	121	24	1.00
Educational status*	No formal education	42	13	0.90(0.38,2.09)
	1-8 completed	113	27	1.16(0.57,2.36)
	9-12 completed	92	7	3.65(1.40,9.52)
	Above 12	54	15	1.00
Residence	Rural	139	162	0.75(0.44,1.30)
	Urban	33	29	1.00
Transportation availability	Yes	174	39	0.81(0.46,1.42)
	No	127	23	1.00
Transportation for current visit	Kareza/cart	55	12	1.15(0.56,2.37)
	Walking	95	12	1.99(0.99,4.00)
	Public transport	151	38	1.00

Table 6 Association of obstetrics characteristics with satisfaction, Wolaita Zone, 2012.

Factors	Satisfaction		AOR (95%CI)	
	Satisfied	Unsatisfied		
Reason for this visit	Planned delivery	246	48	1.31(0.67,2.53)
	Referred delivery	55	14	1.00
Duration of labor*	<12 hrs	163	23	3.17(1.54,6.51)
	12-24 hrs	100	22	2.03(0.97,4.24)
	>24 hrs	38	17	1.00
Fetal outcome	Live birth	277	56	1.24(0.48,3.16)
	Still birth	24	6	1.00
Ever had still birth	Yes	49	11	0.90(0.44,1.85)
	No	252	51	1.00
Ever had neonatal death	Yes	49	11	0.87(0.36,2.08)
	No	252	51	1.00
No. of delivery in the last 5 yrs	Three &above	13	4	0.70(0.22,2.23)
	Two	78	13	1.29(0.66,2.51)
	One	210	45	1.00

* =Significant association at significance level of 0.05

Table 7 Association of ANC related Knowledge and practice with satisfaction, Wolaita Zone, 2012.

Factors		Satisfaction		COR (95%CI)
		Satisfied	Unsatisfied	
Know that ANC service is available				
	Yes	285	58	1.23(0.40,3.81)
	No	16	4	1.00
Know ANC service has advantage?				
	Yes	279	53	2.15(0.94,4.93)
	No	22	9	1.00
Know ANC helps to detect & treat problems during pregnancy?				
	Yes	266	49	2.02(1.00,4.08)
	No	35	13	1.00
Know ANC helps to be informed about place of delivery?*				
	Yes	264	47	2.28(1.16,4.47)
	No	37	15	1.00
Know ANC helps to check the condition of the fetus?				
	Yes	270	53	1.48(0.67,3.29)
	No	31	9	1.00
ANC follow up for recent pregnancy (n=363)				
	Yes	257	54	0.86(0.39,1.94)
	No	44	8	1.00
No. ANC visit for recent pregnancy (n=311)	More than three	137	27	3.22(0.98,10.59)
	Two to three	110	22	3.12(0.93,10.45)
	One	8	5	1.00
Place for last ANC visit for recent pregnancy				
	Hospital	17	10	0.53(0.15,1.90)
	Health center/private clinic	224	39	1.79(0.62,5.18)
	Health post/home	16	5	1.00
Information given to deliver in the health facility				
	Yes	236	50	0.94(0.31,2.88)
	No	20	40	1.00
ANC attendant at last visit				
	GP/specialist	12	11	0.34(0.09,1.24)
	HO/Nurse	229	38	1.88(0.65,5.44)
	HEW	16	5	1.00

* = Significant association at significance level of 0.05

Table 8 Association of dimensions of care with overall satisfaction among mothers in Wolaita Zone, 2012.

Factors		Satisfaction		COR (95%,CI)
		Satisfied	Unsatisfied	
Examination area cleanliness	Satisfied	291	44	11.9 (5.16,27.45)
	Unsatisfied	10	18	1.00
Waiting time to see health worker	Satisfied	278	41	6.19 (3.15,12.18)
	Unsatisfied	23	21	1.00
Courtesy and respect	Satisfied	294	50	10.08 (3.79,26.84)
	Unsatisfied	7	12	1.00
Information and education service	Satisfied	286	51	4.11 (1.79,9.46)
	Unsatisfied	15	11	1.00
Overall cleanliness of the facility	Satisfied	262	29	7.65 (4.19,13.95)
	Unsatisfied	39	33	1.00
Completeness of information	Satisfied	287	44	8.39 (3.89,18.06)
	Unsatisfied	14	18	1.00
Access and cleanliness of toilet	Satisfied	213	18	5.92 (3.24,10.8)
	Unsatisfied	88	44	1.00
Confidentiality and trust in providers	Satisfied	291	48	8.49 (3.57,20.20)
	Unsatisfied	10	14	1.00
Availability of drugs and supplies	Satisfied	282	35	11.45 (5.78,22.69)
	Unsatisfied	19	27	1.00
Waiting area cleanliness and comfort	Satisfied	266	31	7.60 (4.13,13.99)
	Unsatisfied	35	31	1.00
Cost paid to service	Satisfied	278	40	6.65 (3.40,13.02)
	Unsatisfied	23	22	1.00
Health facility distance	Satisfied	201	28	2.44 (1.40,4.25)
	Unsatisfied	100	34	1.00
Level of privacy during delivery	Satisfied	287	49	5.44 (2.41,12.27)
	Unsatisfied	14	13	1.00

Table 9 Result showing independent association of factors with overall satisfaction, Wolaita Zone, 2012

Factors	Satisfaction		COR (95%CI)	AOR (95%CI)	
	Satisfied	Unsatisfied			
*Age ^A	<20	10	4	1.3(0.3, 5.2)	0.77(0.17,3.23)
	20-34	270	47	3.0(1.4, 6.6)	2.55(1.11,5.90)
	35-49	21	11	1.00	1.00
*Educational status ^A	No formal education	42	13	0.90(0.38,2.09)	1.44(0.57,3.66)
	1-8 completed	113	27	1.16(0.57,2.36)	1.60(0.75,3.44)
	9-12 completed	92	7	3.65(1.40,9.52)	4.46(1.63,12.18)
	Above 12	54	15	1.00	1.00
*Duration of labor ^A	<12 hrs	163	23	3.17(1.54,6.51)	3.31(1.53,7.17)
	12-24 hrs	100	22	2.03(0.97,4.24)	2.18(1.00,4.72)
	>24 hrs	38	17	1.00	1.00
Know ANC helps to be informed about place of delivery ^A	Yes	264	47	2.28(1.16,4.47)	1.66(0.77,3.57)
	No	37	15	1.00	1.00

^A=Adjusted for age, educational status, duration of labor, Know ANC helps to be informed about place of delivery

*=Significant association in the multivariate analysis at level of significance of 0.05

Discussion:

The safe motherhood initiative has put Utilization of Focused ANC and safe delivery service as a continuum where the former is focused in bringing about better utilization of latter which in turn is a single most determinant to curb down maternal health burden. This study showed as above 82% of postpartum mothers who participated in exit interview had reported as they had at least a single ANC visit for the recent pregnancy where the remaining about a quarter had come to delivery without their experience for prenatal visit. The finding is much higher when compared to data at 2009 for Metekel Zone which was (49.8%) among postpartum mothers. where the discrepancy might be secondary to triggered effect on the study participants to visit by ANC. The overall level of satisfaction was 82.9% which is low compared to other studies in developing countries - 92.5% in Côte d'Ivoire by 2009. Mothers were satisfied in some dimensions of care higher than in other service indices though the figure is higher for the study participant. Maternal dissatisfaction on the other hand was significant on distance to health facility (36.9%), access and/or cleanliness of toilet from waiting area (36.4%) and overall cleanliness of the facility (19.8%) for which mothers were worried more about. The association of age, educational

status, and duration labor with overall satisfaction of postpartum mothers with the delivery service was found after multivariate analysis. Women who stayed on labour pain for less than a sunset were in their above three times higher likelihood on their level of satisfaction when compared to their longer on labor counter mothers, this may show importance of appropriate Parthograph utilization to see more happier postpartum mothers which might enhance further utilization of institutional delivery. Findings from studies conducted in Oromia and Afar Regions of Ethiopia, mothers were complaining high payment for service, inadequate privacy and unfriendly attitude of care providers.

Conclusions

Self reported utilization of ANC service is relatively high. Overall maternal satisfaction with delivery care given to them is promising. ANC can help for better utilization of institutional delivery. Maternal health care providers should plan for more institutional delivery by extending their acceptance in the already visiting mothers. Mothers who happened to visit health facility for delivery attendance can be good promoters for institutional delivery as peer mothers to advocate the service.

ABBREVIATIONS

ANC	Antenatal Care
AOR	Adjusted Odds Ratio
COR	Crude Odds Ratio
NIME	New Innovative Medical Education
MDG	Millennium Development Goals
SPSS	Statistical Package for Social Sciences
SNNPR	Southern Nations, Nationalities and Peoples Region
TT	Tetanus Toxoid
RERC	Research Ethical Review Committee
WHO	World Health Organization

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