



## HEALTH PROMOTION

# Institutional delivery knowledge, attitude, and practice among mothers of childbearing age with one or more children, Ethiopia

KALEAB TESFAYE TELEGNE<sup>1</sup>, TADELE KASSAHUN WUDU<sup>2</sup>, BACHA GUTA ABDISA<sup>3</sup>, ELENI TESFAYE TELEGNE<sup>4</sup>, MEKIBIB KASSA TESSEMA<sup>5</sup>

<sup>1</sup>Department of Public Health, College of Health Science, Debarq University, Debarq, Ethiopia; <sup>2</sup>Department of Statistics, Debarq University, Debarq, Ethiopia; <sup>3</sup>Department of Public Health, Madda Walabu University, Madda Walabu, Ethiopia;

<sup>4</sup>School of Nursing, College of Medicine and Health Science, University of Gondar, Gondar, Ethiopia;

<sup>5</sup>Leshmania Research And Treatment Center, University Of Gondar, Gondar, Ethiopia

## Keywords

Maternal mortality • Health service utilization • Maternal Health

## Summary

**Background.** Institutional delivery is Giving birth in medical institution under the care and Supervision of trained health care providers which promotes newborn survival and reduces maternal mortality. The objective of the study was to assess Knowledge, Attitude and Practice towards institutional delivery among mothers of child bearing age who have one or more child and visit MCH clinic Adaba health center, West Arsi zone, South East Ethiopia.

**Methods.** Institutional based cross sectional study design was conducted. The study was conducted starting from May 1-30, 2021 at Adaba health center, West Arsi zone, South East Ethiopia. Our study sample size is 250 mothers who have at least one birth and visiting MCH at Adaba health center. Systematic random sampling was used to select mothers, Data was collected by using structured questionnaire. Finally, data was analyzed by SPSS version 21.

**Results.** Out of 250 women during our data collection time 246 (98.4%) were our respondents and 4 (1.6%) were non respondents. Among 246 women 213 (86.6%) had good knowledge and 33 (13.4%) had poor knowledge. While 212 (86.2%) had good attitude and 34(13.8%) had poor attitude and 179 (72.8%) had good practice but 67 (27.2%) had poor practice.

**Conclusion.** Increasing knowledge, attitude and practice of mothers towards institutional delivery plays a key role in reducing maternal mortality and morbidity. However, the prevailing level of KAP towards institutional delivery is not satisfactory. Increasing utilization of institutional delivery by increasing awareness of each community through health information dissemination on importance of institutional delivery is needed.

## Background

Institutional delivery means giving birth under the help of trained health professionals under safe and sterile procedures [1].

Early and regular checkups by health professionals are essential in assessing the physical status of women during labor & delivery. In spite of the global and national efforts to reduce maternal morbidity and mortality through the safe mother hood initiative, institutional delivery of babies continues to decrease [2].

According to the most recent statistics published in a study by United Nations (UN) agencies today, a woman dies during pregnancy or childbirth every two minutes. Maternal deaths have either grown or stalled in almost all parts of the world in recent years, according to this report on trends in maternal mortality, which shows significant setbacks for women's health. Maternal deaths continue to be disproportionately prevalent in the world's poorest regions and in nations that are experiencing conflict. Sub-Saharan Africa accounted for almost 70% of all maternal fatalities in 2020 [3].

Almost 800 women die every day from pregnancy-related complications worldwide, where roughly half of all

pregnancies are still unwanted. Because of population expansion, there are still a growing number of women who lack access to contraception. By 2030, Goal 3 of the Sustainable Development Goals aims to lower maternal death rates worldwide to fewer than 70 per 100,000 live births [4].

In Ethiopia the proportions of birth attended by skilled personnel are very much lower than Sub-Saharan Africa. Even for women who access to the services the proportions of birth acquiring in health facility is very low. Only 6% of birth was delivered in health facilities, there is no significant different proportion of delivery service utilization between EDHS 2000, and 2005. However, this figure is moderately increased to 10% in EDHS 2011 [5].

The international safe mother hood initiative made maternal mortality and international priority by way of access to basic maternity care during pregnancy and delivery to all human. However, discrepancies continue to exist in access to maternal health care between the more developed and developing countries world, the richer and poor, urban and rural, educated and uneducated societies [6].

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, 7 percent of women received postnatal care within two days, as recommended [7].

In Africa study shows birth (38/1000), death (15/1000), Infant mortality rate (84/1000 live births), Total fertility rate (5.7 average number of children born to women during reproductive age). Whereas in Ethiopia births shows (34.5/1000), death (15/1000), Infant mortality rate (59/1000 live births), Total fertility rate (4.8 average number of children born to women during reproductive age) [8].

79.8% of rural and 33.5% of urban women had transport facility problem for using health institution services. Whereas Addis Ababa is the least affected (28.5%) and Somali is the most affected region (82.6%) [9]. Study conducted at Munisa woreda, Arsi zone showed that out of the total women, 510 (59.6%) had good attitude, while 325 (40.4%) had poor attitude toward institutional delivery service [10].

The study conducted at Tigray region showed that out of 1113 women 145 (13.02%) of them had delivered one child, 448 (40.25%) had delivered 2-4 children & 520 (46.7%) had delivered  $\geq 5$  children [11]. The study conducted at Woldia, Amhara region shows that out of 471 women 132 (28%) did not know whether that health facility provide delivery service or not [12].

Whereas study done at Dodota woreda, Oromia regional state out of 506 women, 340 (82%) of them had Antenatal care follow up during their last pregnancy [13]. According to the study done at Sekela District, North West Ethiopia out of 371 women only 45 (12%) of them gave birth at health institution during their last delivery [14].

Different studies conducted in Ethiopia and in other 3rd world developing countries identify determinants that limit the use of maternity health services. Not unexpectedly, the woman's low educational level, the lack of empowerment among women, poor access to maternal health care services was identified [6].

Ethiopia is one of the developing countries in the world. The individual average income per year is estimated to be less than 130 US\$. Because of the economic level of the country the health service provision insufficient. For insufficiency of the health services, the knowledge, attitude & practice toward health institution visit affect the society in various ways.

An estimate 34% of pregnant women receives Antenatal care, among those only 54% delivery was at health institutions and only 3.5% of these receive Post natal care. The proportion of receiving ANC is very low when compared with neighboring countries like Kenya (90%), Sudan (40%), Djibouti (75%). Health facilities are not often equipped with sufficient supplies of emergency medicine, and essential equipment, lack of medical protocols to guide health care providers and effective supervision [5].

For the above mentioned problems, we are interested

to conduct our study. We would like to recommend the whole concerned body as they take possible action to increase institutional delivery practice which is essential for development of our country both directly and indirectly.

Women comprises of a large proportion of a given society, still many women in developing countries are at greater disadvantage. A large number of women are needlessly dying due to factors related to pregnancy and child birth. Experiences from developed and some developing country showed that maternal death could be prevented if women had access to basic maternal health services

Accordingly, the Ministry of Health (MOH) Ethiopia report in 2007 the antenatal and delivery care coverage in Oromia region was 39.7% and 12.1% respectively, which was below national target [5] Based on the result of previous research, there is a need to assess KAP towards institutional delivery among mother of child bearing age who have one or more child.

The result of research helps the communities to increase institutional delivery, to decrease infant and maternal mortality and morbidity rates and to reduce child hood illnesses and post natal complications.

## Methods

### STUDY AREA AND STUDY PERIOD

The 2007 national census reported a total population of this woreda of 138,717 of whom 68,775 were men and 69,942 were women. The majority of the inhabitants were Muslims 84.39%, while 14.46% orthodox Christianity and 1.15% were Protestants [15]. Our study was conducted from May 1-May 30, 2021.

### STUDY DESIGN

Institutional based cross-sectional study design was carried out to assess KAP of institutional delivery at Adaba health center, West Arsi Zone South East Ethiopia.

### SOURCE POPULATION

Source population was mothers visiting at Adaba health center, who have at least one birth.

### STUDY POPULATION

Study population was mothers visiting MCH clinic at Adaba health center, who have at least one birth and selected by systematic random sampling method and meet inclusion criteria.

### INCLUSION CRITERIA

Our inclusion criteria is women age 15-49 who experienced birth in present place and live at the area at least 6 months.

### EXCLUSION CRITERIA

Our exclusion criteria is mothers who were not potential to be study subject like; having mental problem, can't speak and hear.

**SAMPLE SIZE DETERMINATION AND SAMPLING TECHNIQUES**

- Sample size determination  
The sample size was calculated using single population proportion formula [16].  
 $P = \text{prevalence of institutional delivery } 18.2\%$   
 $(P = 0.182)$  [13].  
Let us assume non respondent rate 10%  
 $100\% = 227, 10\% = x,$   
then  $x = (227)10\%/100\% = 22.7 \approx 23.$   
So our study sampling size would be  $227 + 23 = 250.$
- Sampling technique  
Systematic random sampling were used to select women who visit MCH clinic at Adaba Health Center. The total number of mothers who visit MCH clinic at Adaba health center for one month was 764. So to collect our data we first calculate the constant  $K^{\text{th}}$  value. That is  $k = N/n \rightarrow 764/250 = 3.05 \approx 3$  that means every 3 mothers was selected.

**Data collection technique and instruments**

The questionnaire consists of four parts, composed of socio-demographic, knowledge, attitude and practice. It consists of both open ended and closed ended questions. It is prepared in English version and translated into their own mother tongue *i.e.* Afan Oromo and Amharic during data collection. Data was collected by using structured questionnaire adapted by reviewing literatures. Data was collected by all members of our research team after having common understanding of how to collect data by discussion. Mothers who answered knowledge related questions correctly and scored more than or equal to the mean score value ( $\geq 7$ ) regarding institutional delivery categorize as having Good knowledge (Tab. II). Mothers who answered attitude related questions correctly and scored more than or equal to the mean score value ( $\geq 4$ ) regarding institutional delivery categorize as having Good attitude (Fig. 1).

**VARIABLES**

*Dependent variables*

- Knowledge.
- Attitude.
- Practice.

*Independent variable*

- Age.
- Gravidity.
- Marital status.
- Parity.
- Educational status.
- Occupational level.
- Ethnicity.
- Religion.
- House hold income.

**DATA PROCESSING AND ANALYSIS**

Data was analyzed using SPSS version 21. We entered variable view and data view, then we were categorized, code and summarize data. According to our variables which used in frequency, percentages, checked and re-checked for completeness and consistency. Then cross tabulation was performed.

**DATA QUALITY MANAGEMENT**

Before actual data collection, pre-test was done outside of study area to check respondent ability to answer the question, time taken for interview and then amendment was made accordingly. After completion of data collection consistency of the questionnaire was checked.

**ETHICAL CONSIDERATION**

Permission was secured from Madda Walabu University Institutional Research Ethics Review Board. The purpose of study was explained to the respondents. We were asking permission to interview them. No obligation was made for those who have not willingness to give information. The name of the respondent was not written in any form of the questionnaire.

**Results**

**RESPONDENTS SOCIO-DEMOGRAPHIC CHARACTERISTICS**

We have taken a total of 250 mothers of reproductive age, among this mothers 246 (98.4%) were our respondents and 4 (1.76%) were non-respondent mothers. Among our respondent mothers 15-19 years were 19 (7.7%), 20-24 were 72 (29.3%), 25-29 years were 94 (38.2%), those 30-34 years were 33 (13.4%), 35-39 years were 17 (6.9%) while mothers of 40-44 years were 9 (3.7%) and mothers of 45-49 were 2 (0.8%).

The marital status of our respondents was mainly married that is 223 (90.7%), divorced 11 (4.5%), widowed 5 (2.0%) and single 7 (2.8%). Out of 246 mothers 171 (69.5%) were Muslims, Orthodox 58 (23.6%), Protestants were 15 (6.1%), and others (wakefata) are 2 (0.8%).

Most of them were Oromo 216 (87.8%), Amhara 20 (8.1%), Tigre 2 (0.8%), Somali 1 (0.4%) and others (Guraghe, Wolayita and Hadiya) were 7 (2.8%).

According to our study the educational status of respondents those unable to read and write were 63 (25.6%), primary school 107 (43.5%), secondary school 41 (16.7%), preparatory were 9 (3.7%), diploma 12 (4.9%) and 14 (5.7%) were Degree and above.

The occupational status of mothers was mainly house wife 115 (46.7%), private 100 (40.7%), daily labour 6 (2.4%), government workers were 25 (10.2%).

The household income in Ethiopian birr, who have less than 500 were 15 (6.1%), 30 (12.2%) earn 500-999 ETB, 81 (32.9%) earn 1000-1499 ETB per month while 50 (20.3%) earn 1500-1999 ETB, 32 (13.0%) earn 2000-2499 ETB and 38 (15.4%) of the respondents earn  $\geq 2500$  ETB per month.

The socio-demographic characteristics of mothers (n = 246) were summarized in the Table I.

### KNOWLEDGE RELATED

Among 246 women 216 (87.8%) knew the advantage of institutional delivery but 30 (12.2%) of mothers did not know the advantage of delivering at institutional level and 213 (86.6%) had good knowledge and 33 (13.4%) had poor knowledge towards institutional delivery. Among 246 women 238 (96.7%) knew as health facility give delivery services. Among 239 (97.2%) knew the problems can be faced during delivery, among which 237 (99.2%) did know the women can face excessive vaginal bleeding during delivery but 2 (0.8%) of them

did not know. 224 (93.7%) of them knew prolonged labor and 15 (6.3%) of them did not know, 218 (91.2%) said women can face IUFD during delivery and 21 (8.8%) did not know, 220 (92.1%) said women can die during delivery 19 (7.9%) did not know. 215 (90%) of them knew that problems can result from absence of institutional delivery can be prevented by delivering at health institutions and 24 (10%) did not know.

### ATTITUDE RELATED

Our study showed that out of 246 women 221 (89.8%) agree that institutional delivery has useful effect for mother but 2 (0.8%) disagree and 23 (9.4%) were neutral. 216 (87.8) agree that mothers should give birth

**Tab. I.** The socio-demographic characteristics of mothers who visit MCH at Adaba Health Center West Arsi Zone, South East Ethiopia, May, 2021 (n = 246).

Variables	Characteristics	Frequency	Percent
Age	15-19	19	7.7
	20-24	72	29.3
	25-29	94	38.2
	30-34	33	13.4
	35-39	17	6.9
	40-44	9	3.7
	45-49	2	0.8
	Total	246	100.0
Marital status	Married	223	90.7
	Divorced	11	4.5
	Widowed	5	2.0
	Single	7	2.8
	Total	246	100.0
Religion	Muslim	171	69.5
	Orthodox	58	23.6
	Protestant	15	6.1
	Catholic	0	0
	Other	2	0.8
	Total	246	100.0
Ethnicity	Oromo	216	87.8
	Amhara	20	8.1
	Tigre	2	0.8
	Somale	1	0.4
	Other	7	2.8
	Total	246	100.0
Educational Status	Unable to read and write	63	25.6
	Primary School	107	43.5
	Secondary School	41	16.7
	Preparatory School	9	3.7
	Diploma	12	4.9
	Degree and above	14	5.7
Total	246	100.0	
Occupation	House Wife	115	46.7
	Private	100	40.7
	Daily labour	6	2.4
	Governmental Worker	25	10.2
	Other	0	0
Total	246	100.0	
Monthly income in ETB	< 500	15	6.1
	500-999	30	12.2
	1000-1499	81	32.9
	1500-1999	50	20.3
	2000-2499	32	13.0
	≥ 2500	38	15.5
Total	246	100.0	

**Tab. II.** Knowledge Of mothers towards institutional delivery who visit MCH at Adaba Health Center, West Arsi Zone, South East Ethiopia – May 2021 (n = 246).

Variables	Answer	Frequency	Percent
Advantage of institutional delivery	Yes	216	87.8
	No	30	12.2
	Total	246	100.0
Health facility gives delivery service	Yes	238	96.7
	No	8	3.3
	Total	246	100.0
Women can face problem during delivery	Yes	239	97.2
	No	7	2.8
	Total	246	100.0
Women face excessive vaginal bleeding during delivery	Yes	237	99.2
	No	2	0.8
	Total	239	100.0
Women can face prolonged labor	Yes	224	93.7
	No	15	6.3
	Total	239	100.0
Women can face IUFD during delivery	Yes	218	91.2
	No	21	8.8
	Total	239	100.0
Women can die during delivery	Yes	220	92.1
	No	19	7.9
	Total	239	100.0
Problems can be prevented by delivering at health institution	Yes	215	90.0
	No	24	10.0
	Total	239	100.0

in health institution but 2 (0.8%) and 28 (11.4) were neutral.

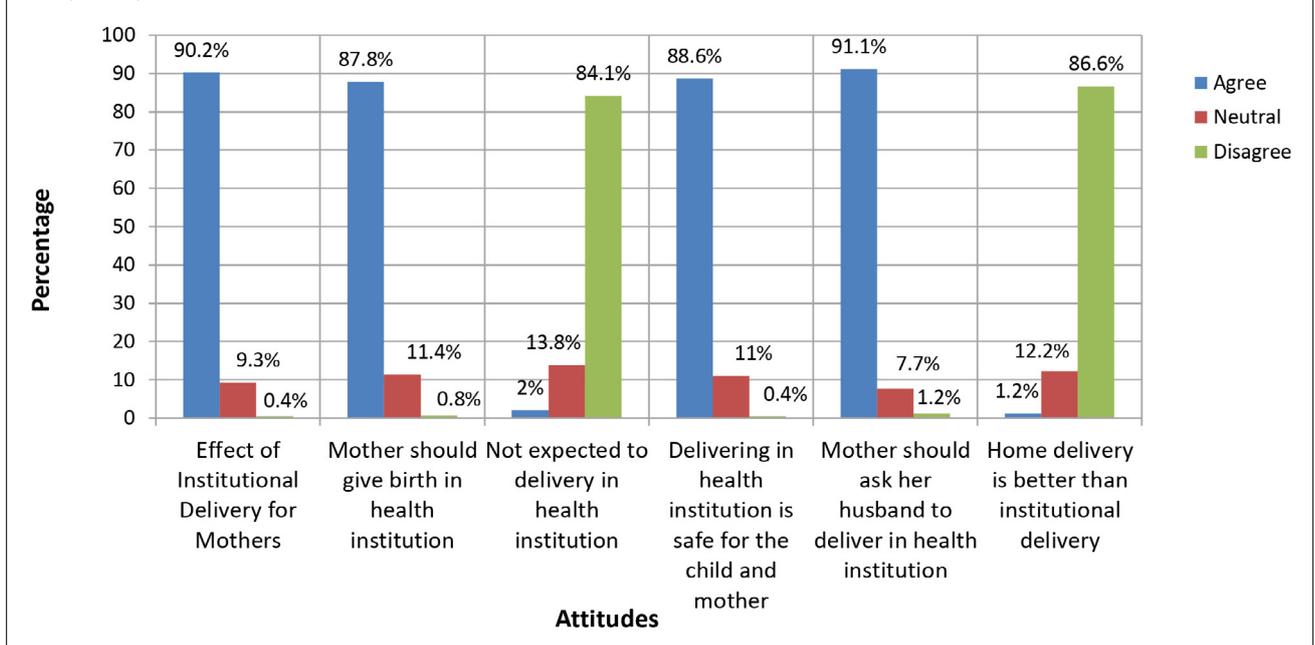
Among our respondents 6 (2.4%) mother agree that mothers should not expected to deliver at health institution, but 206 (83.8%) disagree and 34 (13.8%) were neutral.

At the same time 218 (88.6%) of mothers agree health institutional delivery was safe for mother and the child, but

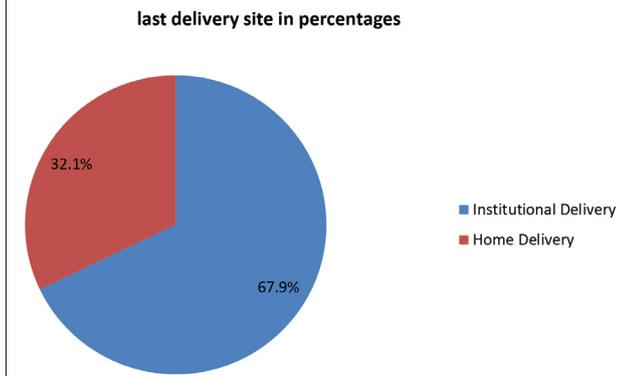
27 (11%) were disagree and the rest 1 (0.4%) were no idea. 224 (91.1%) of mothers agree that their husband should decide to deliver at health institutions while 3 (1.2%) disagree and 19 (7.7%) of them said no idea (neutral).

3 (1.2%) of them agree that home delivery is better than institutional delivery while 213 (86.6%) disagree and 30 (12.2%) had no idea. 212 (86.2%) had good attitude but 34 (13.8%) had poor attitude (Fig. 1).

**Fig. 1.** Showing Attitudes of mothers towards institutional delivery who visiting MCH at Adaba Health Center, West Arsi Zone, South East Ethiopia, May, 2021 (n = 246).



**Fig. 2.** Showing last delivery site of mothers who visiting MCH at Adaba Health Center West Arsi Zone, South East Ethiopia, May, 2021 (n = 246).



### PRACTICE RELATED

The study showed that out of 246 respondents 64 (26%) of them had delivered 1 child, 146 (59.4%) had delivered 2-4 children and the rest 36 (14.6%) had delivered  $\geq 5$  children.

Out of 246 mothers, 179 (72.8%) had ANC follow up during their last pregnancy. Among 167 (67.9%) women who were delivered at health institution 147 (59.8%) has delivered 1-2 children, 27 (11%) of them delivered 3-4 children and 5 (2%) delivered  $\geq 5$  children.

Among who delivered at home 78 (31.7%) of them had delivered 1-2 children, 42 (17.1%) on average had delivered 3-4 children and 18 (7.3%) of mothers had delivered at home were  $\geq 5$  children. Out of 246 mothers last deliveries were institution, 167 (67.9%) and 79 (32.1%) gave their last birth at home (Fig. 2).

Among 246 mothers 179 (72.8%) had good practice and 67 (27.2%) had poor practice. Among last home deliveries 79 (32.1%), 44 (55.7%) were assisted by UTTBA, 8 (10.1%) were by TBA, 27 (34.2%) were assisted by family members and relatives. Among those delivered at home, 4 (5.1%) faced prolonged labor, 20 (25.3%) faced excessive bleeding, 8 (10.1%) fetal death, 3 (3.8%) faced retained placenta and 44 (55.7%) had not faced problem. Reasons for home deliveries of mothers were 38 (48.1%) due to lack of awareness, 3 (3.8%) cultural influence, 7 (8.9%) were due to financial problem and 31 (39.2%) of them were due to sudden onset of labor, while reasons for health institutional delivery 67 (39.9%) were due to personal choice, 98 (58.3%) were informed by health professionals and 3 (1.8%) were due to previous bad outcome of home deliveries.

The final decision makers on place of delivery were mothers themselves 44 (17.9%), 25 (10.2%) were by their husband, both 142 (69.9%) and 5 (2.0%) by health professionals.

### Discussion

Knowledge, attitude and practice towards institutional delivery play a key role in reducing maternal morbidity and mortality.

This study revealed that about 87.8% know advantage of institutional delivery but 12.2% of them did not know the advantage of delivering at health institution, the study also showed that 96.7% know as health facility give delivery service.

While a study conducted at Woldia, Amhara region showed 82% did know as health facility provides delivery service which is lower than our study finding [12]. The difference might be due to minimal awareness about knowledge of institutional delivery and low educational status of mothers comparing to our study.

This study also showed that 97.2% did know as the problem could be faced during delivery, among which 96.3% could mention excessive vaginal bleeding, 93.7% prolonged labor, 91.2% said fetal death, 92.1% mentioned women can die during delivery. While a study at Woldia, Amhara region showed that 82% knew the problem can be faced during delivery, among which 68% said prolonged labor, 83.4% mentioned excessive vaginal bleeding, 39.6% and 12.7% mentioned IUFD and maternal death respectively [12]. This difference might due to time gap, when research done and better accessibility and utilization of institutional delivery during our study.

Our study also showed that 86.6% had good knowledge but 13.4% had poor knowledge. While study done at Sekela district, North West Ethiopia, Aug. 2010 showed that 56.6% had good knowledge [14]. The difference might be due to time gap and educational level of mothers comparing to our study.

This study showed that 86.2% of mothers had good attitude towards institutional delivery service and 13.8% of them had poor attitude towards institutional delivery service. While a study done at Munisa woreda, Arsi zone showed that 59.6% had good attitude while 83.4% had bad attitude toward institutional service [10]. This difference might be due to high government concern to achieve MDG5 and mothers' awareness (KAP towards institutional delivery increased by health education than before) while our study.

This study showed that 26% of mothers had delivered one child, 59.4% of them had delivered 2-4 children and the rest 14.6% had delivered on average  $\geq 5$  children. While a study conducted at Tigray region showed that 13.02% of them had delivered one child, 40.25% had delivered 2-4 children and 46.7% had delivered  $\geq 5$  children [11]. This difference might be due to better knowledge and practice of mothers towards health services.

This research also showed that 72.8% of mothers had ANC follow up during their last pregnancy. The research done at Sekela district North West Ethiopia is 66.8% had ANC follow up during their last pregnancy [14]. The difference may be due to community based but our study was institutional based.

This study indicated that 67.9% of mother's last deliveries were at health institution and 32.1% of their last deliveries were at home. Out of home deliveries, 55.7% were assisted by UTTBA, 10.1% by TTBA and, while family and relatives assisted 34.2%. While a study done Woldia, Amhara region showed that 48.3% gave

**Tab. III.** Practice of mothers towards institutional delivery who visit MCH at Adaba Health Center, West Arsi Zone, South East Ethiopia May, 2021 (n = 246).

Variables	Response	Frequency	Percent (%)
Number of birth throughout their life	1	64	26
	2	69	28
	3	50	20.3
	4	27	11
	≥ 5	36	14.6
	Total	246	100.0
Number of children delivered at institution	1	87	48.6
	2	60	33.5
	3	18	10.1
	4	9	5.0
	≥ 5	5	2.8
	Total	179	100.0
ANC follow up during last pregnancy	Yes	179	72.8
	No	67	27.2
	Total	246	100.0
Last delivery site	Institution	167	67.9
	Home	79	32.1
	Total	246	100.0
Reason of home delivery	Lack of awerness	38	48.1
	Cultural influence	3	3.8
	Financial problem	7	8.9
	Sudden onset of labor	31	39.2
	Total	79	100.0
Attendants of delivery at home	UTTBA	44	55.7
	TBA	8	10.1
	Family members	27	34.2
	Total	79	100.0
Problems faced at home delivery	No problem	44	55.7
	Retained placenta	3	3.8
	Excessive vaginal bleeding	20	25.3
	Neonatal death	8	10.1
	Prolonged labor	7	8.9
	Total	79	100.0
Reason for health institutional delivery	Personal choice	67	40.1
	Informed by health worker	98	58.7
	Previous bad outcomes of home delivery	2	1.2
	Total	167	100.0
Number of birth throughout their life	1	64	26
	2	69	28
	3	50	20.3
	4	27	11
	≥ 5	36	14.6
	Total	246	100.0
Number of children delivered at institution	1	87	48.6
	2	60	33.5
	3	18	10.1
	4	9	5.0
	≥ 5	5	2.8
	Total	179	100.0
ANC follow up during last pregnancy	Yes	179	72.8
	No	67	32.1
	Total	246	100.0
Last delivery site	Institution	167	67.9
	Home	79	32.1
	Total	246	100.0
Reason of home delivery	Lack of awerness	38	48.1
	Cultural influence	3	3.8
	Financial problem	7	8.9
	Sudden onset of labor	31	39.2
	Total	79	100.0
Attendants of delivery at home	UTTBA	44	55.7
	TBA	8	10.1
	Family members	27	34.2
	Total	79	100.0

continues ►

Tab. III. (follows).

Variables	Response	Frequency	Percent (%)
Problems faced at home delivery	No problem	44	55.7
	Retained placenta	3	3.8
	Excessive vaginal bleeding	20	25.3
	Neonatal death	8	10.1
	Prolonged labor	4	5.1
	Total	79	100.0
Reason for health institutional delivery	Personal choice	67	40.1
	Informed by health worker	98	58.7
	Previous bad outcomes of home delivery	2	1.2
	Total	167	100.0

their last birth at health institution and 51.8% at home. Out of these home deliveries, family members assisted 59.7% and relatives, 22.5% were by UTTBA, 10.2% and 41.9% were by TTBA and themselves respectively [12]. The difference might be due to low level of knowledge and Practice towards institutional delivery at that time.

Our study showed that among home delivery 5.1% faced prolonged labor, 25.3% faced excessive vaginal bleeding, 10.1% fetal death and 3.8% retained placenta and 55.7% faced, no problem. The study done at Woldia, Ethiopia, 39.4% faced retained placenta, 27.3% prolonged labor, and 27.3% excessive vaginal bleeding and 12% faced loss of consciousness [12]. This difference might be due to increasing utilization of institutional deliveries and decreasing problems during delivery.

This study also revealed that the final decision makers on place of delivery, 17.9% were by mothers themselves, 10.2% by husband 69.9% jointly and the rest 2% were informed by health professionals. While a study conducted at Tigray region, showed that 74% of them decided site of delivery by themselves, 18% jointly and the rest 8% had decided by health professionals [11]. The difference might be from urban and rural settings.

#### LIMITATION OF THE STUDY

This study had not made association for some variables related to KAP of mothers towards institutional delivery and small sample size of the study affect generalizability of findings and Strength of study is there is no previous research done in study area about institutional delivery knowledge, attitude, and practice among mothers of childbearing age with one or more children.

#### Conclusion

Increasing knowledge, attitude and practice of mothers towards institutional delivery plays a key role in reducing maternal mortality and morbidity. However, the prevailing level of KAP towards institutional delivery is not satisfactory.

Increasing utilization of institutional delivery by increasing awareness of each community through health information dissemination on importance of institutional delivery. Health professionals; health extension workers and community health agents are primary task takers for this action.

#### Ethics approval

Permission was secured from Madda Walabu University Institutional Research Ethics Review Board. The purpose of study was explained to the respondents. We were asking permission to interview them. No obligation was made for those who have not willingness to give information. The name of the respondent was not written in any form of the questionnaire.

#### Availability of data and materials

All data are included in the study.

#### Funding

There was no financing available for this project.

#### Conflict of interest statement

There are no conflicts of interests stated by the authors.

#### Authors' contributions

KTT was responsible for conceptualization, methodology, analysis, supervision, and report writing, TKW, ETT and MKT was responsible for analysis, report writing and methodology and, LB was responsible for methodology, and report writing.

#### References

- [1] Hagos S, Shaweno D, Assegid M, Mekonnen A, Afework MF, Ahmed S. Utilization of institutional delivery service at Wukro and Butajera districts in the Northern and South Central Ethiopia. *BMC Pregnancy Childbirth* 2014;14:178. <https://doi.org/10.1186/1471-2393-14-178>
- [2] Abraha MW, Nigatu TH. Modeling trends of health and health related indicators in Ethiopia (1995-2008): a time-series study. *Health Res Policy Syst* 2009;7:29. <https://doi.org/10.1186/1478-4505-7-29>
- [3] Trends in maternal mortality 2000 to 2020: estimates by WHO, UNICEF, UNFPA, World Bank Group and UNDESA/Population Division. Geneva: World Health Organization 2023. Licence:

- CC BY-NC-SA 3.0 IGO. Available at: <https://www.who.int/publications/i/item/9789240068759> (Accessed on: 10/3/2023).
- [4] Nations U. The Sustainable Development Goals. 2020. Available at: <https://sdgs.un.org/goals> (Accessed on: 12/2/2021).
- [5] Ababa A. Federal democratic republic of Ethiopia ministry of health. Ethiopia: Postnatal Care 2003.
- [6] Weil O, Fernandez H. Is safe motherhood an orphan initiative? *Lancet* 1999;354:940-3. [https://doi.org/10.1016/S0140-6736\(99\)02369-7](https://doi.org/10.1016/S0140-6736(99)02369-7)
- [7] Shah D, Shroff S, Sheth S. Reproductive and sexual health and safe motherhood in the developing world. *Eur J Contracept Reprod Health Care* 1999;4:217-28. <https://doi.org/10.3109/13625189909071342>
- [8] PRB staff. World Population Highlights: Key Findings From PRB's 2010 World Population Data Sheet. *Population Bulletin* 2010;65(2).
- [9] Mekonnen Y, Mekonnen A. Factors influencing the use of maternal healthcare services in Ethiopia. *Journal of health, population and nutrition* 2003;1:374-82.
- [10] Amano A, Gebeyehu A, Birhanu Z. Institutional delivery service utilization in Munisa Woreda, South East Ethiopia: a community based cross-sectional study. *BMC Pregnancy Childbirth* 2012;12:105. <https://doi.org/10.1186/1471-2393-12-105>
- [11] Tsegay Y, Gebrehiwot T, Goicolea I, Edin K, Lemma H, Sebastian MS. Determinants of antenatal and delivery care utilization in Tigray region, Ethiopia: a cross-sectional study. *Int J Equity Health* 2013;12:30. <https://doi.org/10.1186/1475-9276-12-30>
- [12] Worku Awoke, Jemal Muhammed, Gedefaw Abeje. Institutional Delivery Service Utilization in Woldia, Ethiopia, *Science Journal of Public Health* 2013;1:18-23. <https://doi.org/10.11648/j.sjph.20130101.13>
- [13] Fikre AA, Demissie M. Prevalence of institutional delivery and associated factors in Dodota Woreda (district), Oromia regional state, Ethiopia. *Reproductive Health* 2012;9:33. <https://doi.org/10.1186/1742-4755-9-33>
- [14] Teferra AS, Alemu FM, Woldeyohannes SM. Institutional delivery service utilization and associated factors among mothers who gave birth in the last 12 months in Sekela District, north west of Ethiopia: a community-based cross sectional study. *BMC Pregnancy Childbirth* 2012;12:74. <https://doi.org/10.1186/1471-2393-12-74>
- [15] Bekele S. Analysis on the quality of age and sex data collected in the two population and housing censuses of Ethiopia. *SINET: Ethiop J Sci* 2006;29:123-32.
- [16] Israel GD. Determining sample size, PEOD6. US Department of Agriculture, Cooperative Extension Service, University of Florida, Institute of Food and Agricultural Sciences 1992.

Received on February 9, 2023. Accepted on March 27, 2023.

**Correspondence:** Kaleab Tesfaye Tegegne, Department of Public Health, College of Health Science, Debark University, Debark, Ethiopia. E-mail: [Kaleabtesfaye35@gmail.com](mailto:Kaleabtesfaye35@gmail.com)

**How to cite this article:** Tegegne KT, Wudu TK, Abdisa BG, Tegegne ET, Tessema MK. Institutional delivery knowledge, attitude, and practice among mothers of childbearing age with one or more children, Ethiopia. *J Prev Med Hyg* 2023;64:E67-E77. <https://doi.org/10.15167/2421-4248/jpmh2023.64.1.2864>

© Copyright by Pacini Editore Srl, Pisa, Italy

This is an open access article distributed in accordance with the CC-BY-NC-ND (Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International) license. The article can be used by giving appropriate credit and mentioning the license, but only for non-commercial purposes and only in the original version. For further information: <https://creativecommons.org/licenses/by-nc-nd/4.0/deed.en>

## Appendix

### Operational Definitions

**Safe delivery** = delivery attended by skilled birth attendants (midwifery, General Practitioner, health officer, nurse).

**Attitude** = idea towards institutional delivery.

**Poor attitude** = mothers who answered attitude related questions correctly and scored less than the mean score value ( $< 4$ ) regarding institutional delivery.

**Good attitude** = mothers who answered attitude related questions correctly and scored more than or equal to the mean score value ( $\geq 4$ ) regarding institutional delivery.

**Knowledge** = awareness towards institutional delivery.

**Good knowledge** = mothers who answered knowledge related questions correctly and scored more than or equal to the mean score value ( $\geq 7$ ) regarding institutional delivery.

**Poor knowledge** = mothers who answered knowledge related questions correctly and scored less than the mean score value ( $< 7$ ) regarding institutional delivery.

**Practice** = habit of utilization of health institution during child birth.

**Good practice** = a woman who had delivered at least one child in the health institution.

**Poor practice** = a woman who had never given at health institution.

**Prolonged labor** = labor that lasts for more than 12 hours for multigravida and more than 18 hours for primigravida.

**Obstructed labor** = failure to pass fetus through uterine cavity while there was adequate uterine contractions and with fully cervical dilatation.

**Ante partum hemorrhage** = bleeding during pregnancy from 28<sup>th</sup> weeks of gestation till delivery of the fetus.

### Questionnaire

This Questionnaire was prepared by Madda Walabu University for collection of data on KAP towards institutional delivery at Adaba Town in Adaba Health Center. It is an important contribution for the health of the mothers and safe for the child. We would like to assure the respondents that the study is confidential; we will not keep a record of your name and address. At the same time she has also a full right to ask the interviewer for clarification of unclear and ambiguous questions.

#### Are you willing to participate in the interview?

1. Yes, go to the next page

2. No, thank them and interrupt the interview

Name of collector

Signature

Qualification

Woreda

Kebele

House hold number

Date of collection

Starting time

Finishing time

#### Part I. Socio-demographic characteristics.

S.NO	Questions	Possible answer		Skip
1	Your age in year			
2	What is your marital status?	A. Married	C. Widowed	
		B. Divorced	D. Single	
3	What is your religion?	A. Muslim	D. Protestant	
		B. Orthodox	E. Others	
		C. Catholic		
4	What is your ethnicity?	A. Oromo	D. Sumali	
		B. Amhara	E. Other	
		C. Tigre		
5	What is your educational status?	A. Unable to read and write	D. Preparatory (11-12)	
		B. Primary school (1-8)	E. Diploma	
		C. High school (9-10)	F. Degree and above	
6	What is your occupational status?	A. House wife	D. Governmental worker	
		B. Private	E. Others (specify)	
		C. Daily labour		
7	House hold income in Ethiopian birr			

Part II. Knowledge related.

No	Questions	Possible answer	Skip	
1	Do you know that the advantage of using institutional delivery?	A. Yes	B. No	
2	Do you know that health facility give delivery service?	A. Yes	B. No	
3	Do you know that women can face problem during child birth?	A. Yes	B. No	If No, skip (4)
4	If your answer in question number (3) yes does you know that women can face excessive bleeding during delivery?	A. yes	B. No	
5	Do you know that women can face obstructed labour during child birth?	A. Yes	B. No	
6	Do you know that women can face intra uterine fetal death during delivery?	A. Yes	B. No	
7	Do you know that the mother can die during delivery?	A. Yes	B. No	
8	Do you know that problem can be prevented by institutional delivery?	A. Yes	B. No	

B. Attitude related

No	Questions	Possible answer	Skip	
1	In your opinion institutional delivery has an effect on mother?	A. Agree B. Neutral	C. Disagree	
2	In your opinion mothers should give birth in health institutions?	A. Agree B. Neutral	C. Disagree	
3	In your opinion mothers is not expected to delivery in health institution?	A. Agree B. Neutral	C. Disagree	
4	Delivering in health institution is safe for the child and mother?	A. Agree B. Neutral	C. Disagree	
5	In your opinion mother should ask her husband to deliver in health institution?	A. agree B,neutral	C. Disagree	
6	Do you think home delivery is better than institutional delivery?	A. agree B. Neutral	C. Disagree	

C. Practice related

No	Question	Possible answer	Skip
1	How many births do you have?(open)		
2	How many children delivered in health institution? (open)		
3	How many children delivered at home?(open)		
4	Have you ANC follow up in the last pregnancy?	A. Yes B. No	
5	Where was your last delivery site?	A. Health institution B. At home	If Institution skip (6, 7, 8)
6	If your answer in question number 5, at home what was your reason?	A. Lack of awareness B. Cultural influence C. Financial problem D. Others (specify)	
7	If your answer for question number 5 at home who attends the delivery?	A. Untrained B. TTBA C. Family member D. By my self E. Others	
8	If your answer for question number 5 at home, what problems did the mother face?	A. No problems B. Retained Placenta C. Excessive bleeding D. Still birth E. Obstructed labour F. Other	
9	If question umber 5 in health institution what was your reason?	A. Personal choice B. Informed by health worker C. Previously bad outcome of home delivery D. Others (specify)	
10	Who was the final decision maker on place of delivery?	A. Me B. Husband C. Health worker D. Others (specify)	