Respectful Delivery Care and Associated Factors in Public Health Facilities in Debre Berhan Town, Ethiopia

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Abstract

Background: Many interventions have been implemented to increase institutional delivery in Ethiopia. However, only 26% of women delivered in health facilities. This increases the curiosity of the scientific community to know more about the quality of maternity care in the country.

Objective: This study aimed to assess the proportion of respectful delivery care and associated factors among women delivering in Debre Berhan town public health facilities, Ethiopia, 2019.

Methods: Institution-based cross-sectional study was conducted among 412 women who delivered in Debre Berhan town public health facilities from November 15 to December 30, 2019. A consecutive sampling method was used to identify study participants. A pretested structured questionnaire was administered by the interviewer. Bivariable and multivariable logistic analyses were conducted. Adjusted Odds ratio along with a 95% confidence interval was used to assess the magnitude and direction of the association. Statistically significant association was declared at a P-value of less than 0.05.

Results: A total of 412 postnatal women were participated in this study, yielding a 99.8% response rate. About 35.7% (95% CI: 31%, 40.3%) women reported that they have received respectful delivery care. Daytime delivery [AOR=2.48; 95% CI (1.55, 3.99)], secondary school educational status and plus [AOR= 3.59; 95% CI (1.53, 8.42)], having a companion during delivery [AOR=2.45; 95% CI (1.47, 4.07)], and having four or more antenatal care visits [AOR= 2.54; 95% CI (1.60, 4.01)] were positively associated with respectful delivery care.

Conclusions: The proportion of women reporting respectful delivery care was low. Women who had four or more ANC visits, who were secondary-level or higher educated, delivered during the daytime, and had a companion during delivery were more likely to receive respectful delivery care. Thus, allowing the mother to have a companion, improve ANC service utilization, and improving education accomplishment should be the focus area of intervention.

Introduction

Respectful maternity care (RMC) is the care that maintains self-respect, privacy, freedom from any abuse, and that is based on women's choice and preference [1]. Globally, in the past three decades, much progress has been made in reducing maternal mortality [2]. However, in 2017 around 810 women lost their lives from preventable causes every day while giving birth. Two-thirds of maternal mortality occurred in Sub-Saharan Africa countries. Ethiopia is one of four nations in the world with the highest number of maternal deaths, 412 maternal deaths per 100,000 live births [3,4].

Most deliveries do not require a high level of clinical expertise. However, delivery without respect can be a source of painful memories. Therefore mother and health professional relationship is crucial [5–7]. World Health Organization (WHO) reported that the majority of women are mistreated by their birth attendants [8]. A systematic review conducted in Ethiopia showed that 50% of mothers were disrespected while giving birth in the public institution [9], ranging from 98.9% in southern Ethiopia [10] to 21.6% in northern Ethiopia [11]. Disrespectful and abusive care has seven forms including physical abuse, non-consented care, non-dignified care, non-confidential care, discriminated care, abandonment, and detention in facilities [7].

Disrespectful delivery care is gender-based violence that threatens human rights for respectful and discrimination-free care [12]. It also affects treatment outcome, satisfaction, and health facility attendance [13,14]. Disrespectful care violates the right of women to receive respectful care at all health care facilities [15]. Sustainable Development Goals 3 aims to reduce maternal mortality below to 70 per 100,000 live births. But, this ambitious goal cannot be achieved unless the quality of the services is improved [2,16]. WHO encourages governments and development partners to initiate, support, and sustain programs designed to address the quality of maternal and newborn health services [2,8]. Hence, the Ethiopian federal Minister of Health has adopted a new Compassionate and Respectful Care (CRC) approach, and started providing in-service training to all health care providers [17].

In Ethiopia, interventions like maternal waiting homes in health facilities, free services and transportation, pregnant women conferences, and media advocacy campaigns were introduced to increase institutional delivery. Despite the intervention, only 26% of women deliver in health facilities. The gap between antenatal care (ANC) visits (62%) and institutional delivery (26%) indicates problem a with the quality of care [4]. Previous studies have identified socio-demographic factors (age, educational status, and income) [10,11,18,19], and obstetric related factors (gravidity, mode of delivery, ANC visits, and delivery complication) [11,20–22] to be associated with respectful delivery care. However, these identified factors differ by study setting, and no research was conducted on respectful delivery care in Debre Berhan town previously. This study, therefore, aimed to assess the proportion of respectful delivery care and factors associated with respectful delivery care.

Methods

Study design and setting

An institution-based cross-sectional study was conducted from November 15 to December 30, 2019, in Debre Berhan town public health facilities, Ethiopia. Debre Berhan is an administrative city and the capital city of North Shewa Zone in Amhara Regional State. The town is found in central Ethiopia, 130 kilometers away from Addis Ababa, the capital city of Ethiopia. The total population of the town is 108,825 from which 59,617 are females, and 3,667 of them are pregnant. The town has two hospitals, three health centers, and sixteen private clinics. In 2018/19, the percentage of pregnant women who had received at least one ANC visit was 71%, who received at least four ANC visits was 41.6%, and who had an institutional delivery was 53.6%.

Study population

All mothers who delivered in Debre Berhan town public health facilities during the data collection period were the study population. Mothers who had complications and were referred to a higher facility were excluded.

Sample size determination

The intended sample size was calculated for both objectives considering the following assumptions. For the first objective (proportion), by assuming the expected frequency of 57% respectful delivery care [19], 95% level of confidence, population size 108,825, and 5% allowed margin of error. For the second objective (factors), by taking 80% power of the study, 95% confidence interval, odds ratio, and outcome for exposed and non-exposed groups were obtained from the respective studies. Afterward, the larger sample size had been taken. Hence, the calculated sample size of the factors was lower than the proportion of respectful delivery care. Therefore, the final sample size of the study after adding a 10% non-response rate was 413 (“Appendix 1”).

Sampling Technique and Procedure

By assuming that delivery attendance is random, a consecutive sampling technique was used. Every postnatal mother who delivered in Debre Berhan town public health facilities was invited to take part in the research upon exiting the facility until the required sample size was reached. The number of women interviewed from each facility was proportionate to the number of deliveries over the past three previous months.

Data collection and measurement

The data was collected using a pre-tested interviewer-administered structured questionnaire. The questionnaire was prepared in the English language then translated to the local language (Amharic) before data collection and translated back to English. Data collectors were BSc Nurses/Midwives who did not work in the study health facilities. All data collectors were trained on the study protocol, tools, and ethics. Regular supervision and meeting were done daily and any problem raised during data collection was solved immediately. All women were interviewed before leaving the facility in an isolated room to maintain privacy. All the questionnaires and data were checked for completeness and accuracy before, during, and after data collection.

The primary outcome variable, respectful delivery care, was assessed using a tool adapted from the Maternal Child Health Integrated Program (MCHIP) respectful maternity care tool kit [23]. The tool includes seven categories of RMC with verification criteria. These categories are being free from harm and ill-treatment, informed care, dignified care, confidential care, non-discriminatory care, detention due to failure to pay, and never being left alone without care. Maternity services are free in Ethiopia, so the component “detention due to failure to pay” was excluded from the measure. A total of 20 dichotomous indicators were used to measure respectful maternity care under the seven performance categories. Women who reported “yes” to all components of respectful maternity care were considered to have experienced respectful maternity care. Potential explanatory variables were selected and added based on previous literature [18,21,22,24]. Internal consistency of the questionnaire was assessed using Cronbach’s alpha during the pretest (α coefficients = 0.75).

Ethical approval and consents to participate

This research was approved by the Institutional Review Board (IRB) of Debre Berhan University, college of health science (protocol number: 16/19/SPH). An official letter of permission and cooperation were written for Debre Berhan woreda health office and each facility administrators. All of the study participants were more than 18 years. Informed written consent was obtained before data collection from each participant after stating the aims of the study, risks, and benefits of participating in the study. All study participants were informed about their right to discontinue the interview at any time or refuse to answer any of the interview questions if they wish. The privacy and confidentiality of participants were maintained at each step of the study.

Data processing and analysis

The collected data were checked for error, coded, and double-entered into EPI-data version 3.1 and exported to SPSS version 25 software for analysis. The data were summarized using descriptive statistics like proportion, mean, and standard deviation. Multicollinearity between independent variables and all other assumptions of logistic regression were checked. Binary logistic regression analysis was performed to see the association between each independent variable and outcome variable. Those variables with P-value less than 0.25 were entered into a multivariable logistic regression model. The Adjusted Odds ratio along with 95% confidence intervals was computed to assess the strength and direction of the association between predictors and an outcome variable. A statistically significant association was declared at P-value < 0.05.

Result

Sociodemographic characteristics of the study participants

A total of 412 postnatal women with a mean age of 26.71 (SD ± 4.68) participated in this study, yielding a 99.8% response rate. Most women 166 (40.3%) were between the ages of 25-29 years. More than half 228 (55.3%) of women were housewives, and almost all 377 (91.5%) women were married. About 136 (33%) women completed primary school and 330 (80.1%) were urban dwellers (“Table 1”).

Table 1: Sociodemographic characteristics of mothers delivered in Debre Berhan town public health facilities, Ethiopia, 2019.

Variables	Category	Frequency	Percentage
Age	<20 years	18	4.4
	20-24 years	117	28.4
	25-29 years	166	40.3
	30-34 years	81	19.7
	≥ 35 years	30	7.2
Occupation	House wife	228	55.3
	Government employee	45	10.9
	Self-employed	72	17.5
	Private employee	21	5.1
	Others	46	11.2
Marital status	Married	377	91.5
	Single	17	4.1
	Divorced	10	2.5
	Windowed	3	0.7
	Others*	5	1.2
Educational status	No formal education	58	14.1
	Primary (1-8)	136	33
	Secondary (9-12)	128	31.1
	College and above	90	21.8
Residency	Urban	330	80.1
	Rural	82	19.9
Religious	Orthodox	396	96.1
	Muslim	13	3.2
	Others	3	0.7
Income (for urban dweller only)	≤ 2000 birr	96	29
	> 2000 birr	234	71
*= Cohabitating, separated			

Obstetric characteristics of the study participants

Out of 412 participants, half 206 (50%) women were multigravida, and 186 (90%) had previous facility childbirth experience. Of the total women, 176 (42.7%) were delivered via assisted vaginal delivery, and 278 (67.5%) of them were delivered at night time. Nearly one-third of 139 (34%) of women had developed complications during childbirth, and 230 (59%) of women had a companion during delivery care. Regarding ANC follow-up, 402 (97.6%) of women had ANC follow-up at least once, and 209 (52%) had four or more visits (“Table 2”).

Table 2: Obstetric characteristics of respondents in Debre Berhan town health facilities, 2019.

Variables	Category	Frequency	Percentage
Gravidity	Primigravida	206	50
	Multigravida	206	50
Referral status	Yes	200	48.5
	No	212	51.5
Previous facility delivery	Yes	186	90.3
	No	20	9.7
Stage of labor during arrival	First stage	334	81
	Others *	78	19
Laboring hours in the health facility	< 24 hours	403	97.8
	≥ 24 hours	9	2.2
Mode of delivery	SVD	161	39.1
	Assisted V. delivery	176	42.7
	C-section delivery	75	18.2
Delivery time	Night	278	67.5
	Day	134	32.5
Delivery complication	Yes	138	33.5
	No	274	66.5
Having companion	Yes	230	55.8
	No	182	44.2
ANC follow-up	Yes	402	97.6
	No	10	2.4
Number of ANC visits	< 4 ANC visits	193	48
	≥ 4 ANC visits	209	52
HIV status	Positive	15	3.6
	Negative	397	96.4
Outcome of delivery	Alive	397	96.4
	Death	15	3.6
Others (*) includes: 2nd stage, 3rd stage, labour not started, V= Vaginal			

Health system characteristics

The majority 303 (73.5%) of women delivered in hospital, and 410(99.5%) had planned to deliver in the health facilities. About 211 (51.2%) of their delivery care providers were female, and 282 (68.4%) were midwives by profession. About half 204 (49.5%) of providers had 6-10 years of experience (“Table 3”).

Table 3: Health system characteristics of women delivered in Debre Berhan town public health facility, Ethiopia, 2019.

Variables	Category	Frequency	Percentage
Type of health facility	Health center	109	26.5
	Hospital	303	73.5
Future delivery plan (health facilities)	Yes	410	99.5
	No	2	0.5
Sex of provider	Female	211	51.2
	Male	201	48.8
Provider profession	Midwifery	282	68.4
	Doctor (GP &specialist)	84	20.4
	Others*	46	11.2
Provider experiences	≤5 years	145	35.2
	6-10 years	204	49.5
	>10 years	63	15.3
Others (*) includes:-Integrated Emergency Surgical Officer (IESO), health officers, Nurses			

The proportion of respectful delivery care and its components

Nearly one-third 147 (35.7%) (95% CI: 31, 40.3%) of women reported receiving respectful delivery care. The most commonly violated component of respectful delivery care was receiving informed care 197 (47.8%) and the most protected category was discrimination-free care 403(97.8%) (“Figure1”).

From each category of respectful delivery care, about 26(6.3%) of women were denied food and fluid while in labor. A third of women 145(35.2%) reported that the providers did not obtain consent or permission before any procedure, and 46(11.2%) of women did not receive periodic updates on the status and progress of their labor. About 19(4.6%) of women were not protected from sight by curtains or other visual barriers during examination and procedures. Around 68(16.5%) women were insulted, intimidated, or coerced during delivery and 107 (26%) of women were discouraged to call care providers even if they were in need (“Table 4”).

Table 4: The proportion of respectful delivery care and its components among mothers delivered in Debre Berhan public health facilities, Ethiopia, 2019.

Performance indicator	Yes (%)	No (%)
The woman is protected from physical harm or ill treatment	**375(91%)**	**37(9%)**
Never uses physical force or abrasive behavior	401(97.3%)	11(2.7%)
Never physically restrains woman	407(98.7%)	5(1.3%)
Provides comfort/pain-relief as necessary	387(93.9%)	25(6.1%)
Does not deny food or fluid to women in labor	386(93.7%)	26(6.3%)
The woman's right to information and informed consent	**197(47.8%)**	**215(52.2%)**
Introduces self to woman and her companion	394(95.6%)	18(4.4%)
Encourages companion to remain with woman whenever possible	381(92.5%)	31(7.5%)
Encourages woman and her companion to ask questions	398(96.6%)	14(3.4%)
Does the provider actively listen you	400(97.1%)	12(2.9%)
Gives periodic updates on status and progress of labor	342(83%)	70(17%)
Allows the woman to move about during labor	366(88.8%)	46(11.2%)
Allows woman to assume position of choice during birth	397(96.4%)	15(3.6%)
Obtains consent or permission prior to any procedure	267(64.8%)	145(35.2%)
Confidentiality and privacy is protected	**383(93%)**	**29(7%)**
Uses curtains or other visual barrier to protect woman during exams, birth, procedures	393(95.4%)	19(4.6%)
Uses drapes or covering appropriate to protect woman's privacy	401(97.3%)	11(2.7%)
The woman is treated with dignity and respect.	339(82.3%)	73(17.8%)
Speaks politely to woman and companion	387(93.9%)	25(6.1%)
Never makes insults, intimidation, threats, or coerces woman or her companion	344(84.5%)	68(16.5%)
The woman receives equitable care, free of discrimination.	**403(97.8%)**	**9(2.2%)**
Speaks to the woman in a language and at a language-level that she understands	401(97.3%)	11(2.7%)
Does not show disrespect to women based on any specific attribute	406(98.5%)	6(1.5%)
The woman is never left without care	**303(73.5%)**	**109(26.5%)**
Encourages woman to call if needed	305(74%)	107(26%)
Never leaves woman alone or unattended	403(97.8%)	9(2.2%)
Overall the mother received respectful delivery care(all components)	**147(35.7%)**	**265(64.3%)**

Factors associated with respectful delivery care

Educational status, having a companion during delivery, delivery time, and the number of ANC visits were identified as significant predictors of respectful delivery care. Women who had secondary or more educational status were 3.6 times more likely to receive respectful delivery care than non-educated mothers [AOR= 3.59; 95% CI (1.53, 8.42)]. Women who had a companion during delivery care were 2.5 times more likely to receive respectful delivery care than women who had no companion [AOR=2.45; 95 % CI (1.47, 4.07)]. Women who were delivered in the daytime were 2.5 times more likely to receive respectful delivery care than those who delivered at nighttime [AOR=2.48; (1.55, 3.99)]. Women who had four or more ANC visits for current pregnancy were 2.5 times more likely to receive respectful delivery care than mothers who had less than four ANC visits [AOR= 2.54; 95% CI (1.60, 4.01)] ("Table 5").

Table 5: Predictors of respectful delivery care among mothers delivered in Debre Berhan town Public health facilities, Ethiopia, 2019 (n=412)

Variables	Category	RDC		COR (95 % CI)	AOR (95 % CI)
		Yes	No		
Age	< 20	4	13	1	1
	20-34	135	231	1.89(0.60, 5.94)	1.83(0.53, 6.37)
	≥35	8	21	1.23(0.31, 4.91)	1.85(0.38, 8.90)
Place of residence	Urban	129	201	1	1
	Rural	18	64	0.43(0.27, 0.77)	0.81(0.40, 1.66)
Educational status	No formal education	9	49	1	1
	Primary (1-8)	42	92	2.48(1.11, 5.52)	2.24(0.93, 5.34)
	≥ Secondary (9-12)	96	124	4.21(1.97, 9.00)	3.59(1.53, 8.42)*
Occupation	Housewife	73	155	1	1
	Gov't employee	22	23	2.03(1.06, 3.88)	1.12(0.52, 2.38)
	Self-employed	29	43	1.43(.82, 2.47)	1.16(0.62, 2.19)
	Private employee	8	13	1.30(0.51, 3.29)	0.94(0.32, 2.68)
	Others	15	31	1.02(.52, 2.02)	1.14(0.53, 2.45)
Parity	Primigravida	68	138	1	1
	Multigravida	79	127	1.26(0.84, 1.89)	1.42(0.86, 2.33)
Referral status	Yes	58	142	1	1
	No	89	143	1.77(1.17, 2.66)	0.89(0.50, 1.58)
Having family during delivery	No	45	133	1	1
	Yes	102	132	2.17(1.46, 3.32)	2.45(1.47, 4.07)*
Delivery time	Night time	78	200	1	1
	Day time	69	65	2.72(1.77, 4.17)	2.48(1.55, 3.99)**
ANC Visits	< 4 ANC visits	53	160	1	1
	≥ 4 ANC visits	95	114	2.65(1.74, 4.03)	2.54(1.60, 4.01)
Type of health facility	Health center	51	58	1	1
	Hospital	96	207	0.52(0.33, 0.82)	0.58(0.31, 1.08)
Type of profession	Midwifery	106	176	1	1
	Others	41	89	1.30(0.84, 2.03)	1.39(0.78, 2.44)
* (P-value < 0.05) and ** (P-value < 0.01) in multivariate analysis					

Discussion

This study investigated the proportion of women experiencing respectful delivery care and associated factors among those delivering in Debre Berhan town public health facilities. The overall proportion of women who reported to have received respectful delivery care in this study was 35.7%. This is similar to the studies in four regions and Bahir Dar town which reported that about 36% and 32.9% of women received respectful delivery care during their childbirth in the health facility [25,26]. On the contrary, it was lower than the cross-sectional studies conducted in Brazil (81.7%) [27], Kenya (81%)[18], and Ethiopia (78%) [11]. This discrepancy might be due to socio-cultural, economic status, health policy, study setting, and measurement tools variation.

However, the prevalence of respectful delivery care in this study was higher than the previous studies conducted in Addis Ababa (21.4%)[29], Jimma (8.3%) [21], and Gondar (24.6%) [24], Ethiopia. This discrepancy could be because the previous studies were conducted before the government of Ethiopia has taken a compassionate, respectful care approach. Basic supportive training is now given to all maternal health service providers.

The most violated categories of respectful delivery care were receiving informed care (47.8%), and being never left without care (26.5%). The least violated components of respectful delivery care were equitable care (97.8%), free from physical harm and ill-treatment (91%), and dignified care (82.3%). The studies conducted in Addis Ababa [28] and Oromia [22] also reported the same, lack of informed care, and being left without care. The reason for the high level of non-informed care and being left without care might be due to providers being ignorant of ethical principles, the urgency of delivery (sometimes), work overload, imitating practice from their seniors, or facility culture.

On the other hand, a study conducted in Nigeria reported that the most commonly violated form of respectful delivery care was dignified care (51%) and discrimination-free care (31%) (29). A study in Sudan reported that the most common type of disrespectful delivery care was non-confidential care (79.8%) (30). However, another cross-sectional study in Ethiopia identified that physical abuse was common (57.6%) [26], which we did not see in our study. The reason for these disparities could be socio-economic variation, study setting differences related to caseload (hospital vs. health center), and different facility culture for some components of respectful delivery care. This highlights that the practice of respectful delivery care varies from place to place as well as situation to situation.

Having a companion during delivery was a predictor of respectful delivery care. Women who had a companion during delivery care were more likely to receive respectful delivery care. This finding is consistent with other studies conducted in Tigray and Wollega, Ethiopia [11,20]. Women who had a companion might have higher confidence and reduced labor-related stress due to emotional and psychological support provided by their companion. Besides, providers might abstain from abusive care due to fear of the companion, with the companion also assisting providers and helping the women's decision making. In contrast, an observational study conducted in four regions of Ethiopia public health facilities reported that women who had a companion during delivery care had an insignificant association with respectful delivery care [25]. These might be due to different study settings, sample size differences, and study period variation.

In this study, women who were delivered during the daytime were about three-fold more likely to receive respectful delivery care than delivered in the nighttime. This finding is consistent with the studies conducted in Kenya and Ethiopia [18,22]. The possible reason for this association might be due to the sleeping disturbance of the provider, higher caseload during night time, and poor infrastructure of the facility (electric power interruption) during night-time delivery.

Women who had secondary and more educational status were four times more likely to have received respectful delivery care than formally uneducated women. This is in line with the study conducted in Arba Minch, Ethiopia [10]. The possible reason for this association could be that educated mothers might have relatively better knowledge about their rights and entitlements in the health facilities. Moreover, they might develop a good rapport with the provider due to having a similar level of education status and better health-seeking behaviors that help providers develop a better attitude. However, the studies conducted in Tigray and Jimma Ethiopia reported that secondary and more educated mothers were more likely disrespected than illiterate mothers [11,21]. This inconsistency in the Tigray study might be due to a difference in study setting as it was a community-based study within one year of delivery, which might be affected by recall bias. Similarly, a study conducted in Jimma had a small sample size and study population variation that excludes mothers who gave birth via C-section.

Women who had four or more ANC visits received better respectful delivery care than women who had less than four ANC follow-up. This is consistent with the study in Bahir Dar that showed a positive significant association [26]. This could be due to a woman who had more ANC visits being more comfortable seeking health care, and health workers might have a positive attitude toward them. On the contrary, the studies done in Pakistan and Ethiopia showed an insignificant association between respectful delivery care and ANC visits [19,32]. The reason for this discrepancy might be different study settings, different health policy implementation, and socio-cultural variations.

Limitation of the study

This study might be affected by courtesy bias because women might not report disrespectful care experiences due to fear or desire to avoid blaming providers. Women may over-report positive experiences of care due to joy after a successful birth. Future research could use observation studies, because women may not know their rights during facility childbirth, and disrespect might be considered normal. Respectful maternity care is context-specific; future research should incorporate community and health-system related barriers of respectful delivery care and considering the exploration of those barriers through a qualitative study.

Conclusion

The proportion of women who received respectful delivery care was low; only one-third of mothers received respectful delivery care. Women who had four or more ANC visits, had secondary or more educational status, delivered during the daytime, and have companions during delivery were more likely to receive respectful delivery care. Thus, reducing disrespectful care intervention should focus on women's education, allow mothers to have a companion, and improve ANC service utilization.

Declarations

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Authors' contributions

YAW1: overall conceptualization and design of the study, data analysis and interpretation, and manuscript revision; NTS2: Methods of the study, data collection, and drafting of the manuscript; OYM3: Data review, result writing, and preparation of the manuscript. All authors read and approve the final version of the manuscript.

Disclosure statement

None of the authors have any competing interests.

Ethics and consents

This research was approved by the Institutional Review Board (IRB) of Debre Berhan University, college of health science (protocol number: 16/19/SPH). An official letter of permission and cooperation were written for Debre Berhan woreda health office and each facility administrators. All of the study participants were more than 18 years. Informed written consent was obtained before data collection from each participant after stating the aims of the study, risks, and benefits of participating in the study. All study participants were informed about, able to discontinue the interview at any time, and refuse to answer some of the interview questions. The privacy and confidentiality of participants were maintained at each step of the study.

Funding information

None

Paper context: Many interventions have been implemented to reduce maternal mortality and increase institutional delivery in Ethiopia. However, maternal mortality remains high and only 26% of women deliver in health facilities, raising questions about the quality of maternity care. Therefore, assessing the proportion of respectful delivery and associated factors is crucial for evidence-based intervention. Thus, allowing the mother to have a companion, improve ANC service utilization, and women's education should be the focus area of intervention.

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Appendix

Appendix 1: Sample size determination

For 1st the objective	The magnitude of respectful delivery care	Total population	Expected frequency	Margin of error	Design effect	Cal. Sample	Total sample size (+1o %)	References	Remark
		108,825	*57%*	*5%*	*1*	*375*	*413*	*[19]*	
For the 2nd objective	*Factors of respectful delivery care*	Outcome in exposed	Outcome on non-exposed	Power	Confidence level	Odd ratio	N= (Adding 10%)	Reference	*Remark*
	ANC follow-up	*79.4 %*	*61.3 %*	*80*	*95%*	*2.43*	*271*	*[26]*	
	Health facility type	*35.1%*	*17.2%*	*80*	*95%*	*2.59*	*277*	*[10]*	
	Delivery complication	*56.2 %*	*29.5%*	*80*	*95%*	*3.07*	*152*	*[21]*	

Figures

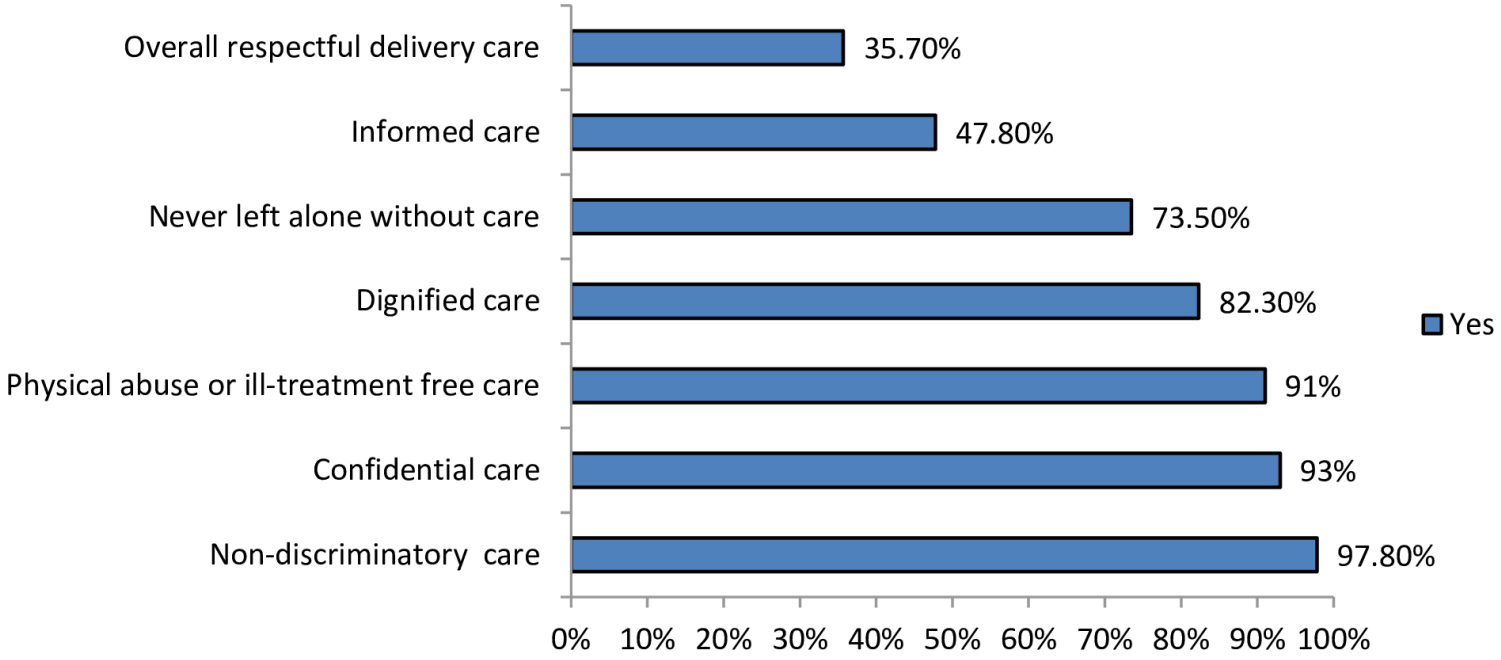

Figure 1

The proportion of respectful delivery care and its component among women delivered in Debre Berhan town health facilities, Ethiopia, 2019.

Supplementary Files

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