Research Article

Contraceptive Counseling at Mizan-Tepi University Teaching Hospital, Southwest Ethiopia

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Abstract

Background: In Ethiopia, postpartum contraception remains underutilized. Few women receive contraceptive counseling despite the country having the highest rates of unintended pregnancies in Sub-Saharan Africa. This study characterizes the prevalence of contraceptive counseling at Mizan-Tepi University Teaching Hospital (MTUTH) and examines differences in maternal demographic, antepartum, and postpartum characteristics between women who did and did not receive contraceptive counseling.

Methods: A prospective cross-sectional study was conducted in 2019 with a convenience sample of 1000 women delivering at 28 weeks or more from MTUTH. Data were collected through chart reviews and patient interviews upon admission, delivery, and discharge. Purposeful modeling was used to identify significant predictors of contraceptive counseling.

Results: The prevalence of contraceptive counseling was 4.55%. Among those with contraceptive counseling data recorded, receipt of counseling was associated with parity and delivery provider ($p < 0.05$). Odds of receiving contraceptive counseling among women with no previous births (parity=0) were 0.83 times less likely than women who had given birth at least three times (parity=3+) (OR: 0.17; 95% CI: 0.05-0.57). Odds of receiving contraceptive counseling among women who had an integrated emergency and surgical officer (IESO) or medical doctor (MD) as their delivery provider were 0.67 times less likely than women who had a midwife (OR: 0.33; 95% CI: 0.11-0.97).

Health Equity: Inequities were identified to increase contraceptive counseling access for women served by MTUTH.

Conclusion: Most women at MTUTH do not receive contraceptive counseling. This quality improvement project allows hospital leadership to develop targeted interventions to improve rates of contraceptive counseling and contributes to the literature surrounding the characterization of contraceptive counseling and uptake in Ethiopia.

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Background

Underutilization of family planning services remains a worldwide public health issue, especially in developing nations. Looking at contraceptive use more specifically, studies have shown that it is practiced by most in-union women in nearly all regions of the world, however prevalence of contraceptive use is lowest in the least developed countries [1]. More than two-thirds of women in developing countries who do not want to conceive are not using contraception, and African countries represent the world region with the lowest prevalence of contraceptive use at 33% in 2015 [1,2]. In

Ethiopia, the 2020 prevalence of modern contraceptive utilization was 58.5% among all women [3]. For married women, contraceptive utilization was 36.5% among women aged 15-19 and 46.4% among those 25-34 years old [4]. This number remains below the national target of 55% for married women [5]. Furthermore, Ethiopia has one of the highest rates of unintended pregnancies in sub-Saharan Africa with nearly every women experiencing at least one unintended birth [6]. Despite these statistics, contraception in postpartum remains underutilized in Ethiopia [7]. Previous studies have identified key determinants of contraceptive utilization in Ethiopia including: antenatal and postnatal care visits, maternal education, number of live children, women's occupation, spousal support, age, wealth status, and history of family planning use and counselling [2,8,9]. This study will be examining these and other determinants of contraceptive counseling more closely as contributors to contraception adoption. Quality family planning counseling in the postpartum period is vital in contraception adoption and retention, as well as reducing maternal and infant morbidity and mortality [10]. In Sub-Saharan African countries, counseling and contraceptive provision lag behind other developing countries [11]. This is reflected in Ethiopia, as few women/couples receive contraceptive counselling [12]. A 2016 study, using the Ethiopian Demographic and Health Survey, showed that only 36.2% of women were informed on contraceptive methods [13]. In country disparities in counseling and adoption are furthered by regional, educational, socioeconomic, and religious factors, along with partner approval and support [6,12]. Specifically, women affiliated with non-orthodox religions (i.e. Muslim, Protestant, or others), having only a primary education, a husband employed in agriculture, being unskilled or with an unknown job, living in Amhara or Oromia regions, and receiving services from private clinics and pharmacies were associated with lower odds of having received contraceptive counselling [13]. With the existing variations in contraceptive counseling and uptake in Ethiopia, it is necessary to address the issue within the contexts of individual communities. This study will focus on maternal discharge patients at Mizan-Tepi University Teaching Hospital (MTUTH) located in Teppi, a city of the Sheka zone of the Southern Nations, Nationalities and Peoples' Region (SNNPR) of Ethiopia. Despite being one of the regions and zones with a relatively high prevalence of contraceptive utilization (2016 regional prevalence: 40%; 2016 zonal prevalence: 39.5%), the level of family planning counseling is inadequate in major Ethiopian hospitals, and the need for training and consideration of maternal background remains [3,10,14]. In recognition of these trends, quality improvement projects serve to identify gaps in care within Ethiopian healthcare facilities to allow for the development of interventions that will improve contraceptive counseling practices and ultimately contraceptive use. A

thorough characterization of the prevalence of contraceptive counseling practices for this hospital and region has yet to be conducted. An analysis of various demographic, intrapartum, and postpartum characteristics was performed to determine differences between groups of women who did and did not receive contraceptive counseling along with those who had missing data for contraceptive counseling upon discharge. Identification of significant predictors will allow MTUTH leadership to better understand how to improve contraceptive counseling and adoption within the hospital. Furthermore, these findings contribute to the body of knowledge surrounding contraceptive counseling in Ethiopia and support efforts to increase contraception use within the communities served by the hospital.

Methods

A hospital-based cross-sectional study was conducted between May 6th and October 21st, 2019, with a convenience sample of all women (n=1000) delivering at 28 weeks or more from MTUTH in Ethiopia. Physicians collected deidentified data from chart reviews and structured patient interviews on paper forms, which were reviewed prior to data entry into REDCap, upon admission, delivery, and discharge. This data set was made available by the Department of Obstetrics and Gynecology with the Center for Global Health. Live maternal discharges, including those who experienced stillborn and early infant death outcomes, were included to comprehensively review factors (i.e. birth experience and other medical complications) affecting contraceptive counseling. No subjects were excluded for this analysis as no maternal deaths were recorded. Using SAS Studio On Demand for Academics version 9.04.01, a number of covariates were considered as predictors of contraceptive counseling. Initial steps focused on determining the prevalence of contraceptive counseling at MTUTH. Bivariate comparisons of prevalence rates among selected covariates between subjects with missing and non-missing contraceptive counseling data and between subjects who did and did not receive contraceptive counseling were then carried out for the secondary and tertiary aims of the study. Due to the substantial proportion of missing data present for this population, analyses were conducted to examine whether patterns of missingness were random. Chi-square tests were performed for categorical covariates, while Fisher's t-tests were used to determine significance (p<0.05) among numeric covariates. Due to the relatively small sample size, predictive modeling was avoided, and purposeful modeling was implemented to develop a multivariable logistic regression that included covariates that best predicted whether a woman did or did not receive contraceptive counseling for the final aim. Covariate model inclusion and screening was informed by current literature and by covariate significance (p < 0.20) from initial analyses. The most significant covariate was first entered, and model fit was evaluated using Akaike

information criterion (AIC). Each predictor was individually added by decreasing significance, including the last model's terms, until the main effects model was completed. Due to the frequency distribution among contraceptive counseling status groups (received: 35, did not receive: 732, no data recorded: 231), the final model was limited to three/four covariates. This quality improvement survey was given an exempt from human subjects' research approval (COMIRB # 18-2738). Oral consent was obtained from each woman before any of their data was recorded. Grant writing and resource evaluation was not necessary for this project.

Results

The following tables display outcomes from descriptive statistics performed for all covariates considered for this study. Variables were transformed to better understand the grouped effects of each exposure on the primary outcome—contraceptive counseling. Obstetric high risk was classified as yes if pregnancy included any of the following: premature rupture of membrane, antepartum hemorrhage, uterine rupture, chorioamnionitis, preeclampsia/eclampsia/chronic HTN, diabetes (pregestational/gestational), anemia, or HIV. Antepartum interventions included any of the following: antepartum blood transfusion, antepartum therapeutic antibiotics, antepartum antihypertensive, antepartum magnesium sulfate, or antepartum steroids. Postpartum complications included hemorrhage, wound dehiscence, wound infection, urinary tract infection, pneumonia, endometritis, admission to CCU, referral to ICU, antibiotics given, blood transfusion, intravenous fluid, pain medication administered, antihypertensive administered, anticonvulsant administered, uterotonics, or D&C reoperation. Finally, neonatal complications was created to include infant resuscitated with bag & mask, referred to MTUTH NICU, intranasal oxygen, CPAP, fluid administration, blood transfusion, or antibiotic administration. Table-1 and -2 show means, standard deviations, and Satterthwaite p-values from Fisher's t-tests for numeric covariates while frequencies, percentages, and p-values are displayed from Chi-square tests performed for categorical covariates. Table-1 displays comparisons between populations of women who did and did not have contraceptive counseling data recorded. As shown, nearly a quarter (23.1%) of the 1,000 women on whom data was collected did not have information regarding contraceptive counseling recorded. Marital status, postpartum complications, parity, and maternal age were significantly associated with whether a woman had contraceptive data recorded. Women were more likely to have contraceptive counseling data recorded if they were married/cohabitating or experienced postpartum complications and this likelihood increased with parity (the number of times a woman had given birth to a fetus with a gestational age of 24 weeks or more) and

maternal age, p < 0.05. Overall, the majority of women with missing contraceptive counseling data had completed up to primary school (45.02%), resided in a rural setting (57.14%), were Protestant (55.41%), married/cohabitating (99.13%), did not smoke or drink alcohol during pregnancy (99.13%; 98.70%), did not have a high risk pregnancy (86.15%), had an unassisted vaginal delivery (67.53%), were assisted by a midwife (73.16%), did not experience antepartum interventions, postpartum complications, or neonatal complications (96.97%; 90.48%; 96.10%), gave birth to a live fetus that sustained through discharge (89.61%), had experienced no prior deliveries (58.44%), carried to term (91.34%), completed at least 4 antenatal visits (60.61%), and delivered to a single fetus (92.21%). These trends were consistent among the entire sample population and between counseling status groups for both Table-1 and Table-2.

After removing those with missing contraceptive counseling data (n=231), the overall prevalence of contraceptive counseling at MTUTH was found to be 4.55%. Table-2 shows results from comparisons between women who did and did not receive contraceptive counseling. Delivery provider and parity were significantly associated with reception of contraceptive counseling, p < 0.05. Women who received contraceptive counseling were more likely to have been assisted by a midwife and to have had a parity of 2 or more.

We used AIC model selection to distinguish among a set of possible models to describe the relationship between various antepartum, intrapartum, and postpartum maternal characteristics and contraceptive counseling. Using statistical significance (p < 0.20) to inform model building, candidate models were compared with the following eligible covariates: method of delivery, parity, delivery provider, postpartum complications, fetal status at delivery, and the number of fetuses delivered. The best-fit model, with the lowest AIC value (273.88), included parity, delivery provider, and fetal status at delivery. It should be noted that there were zero counts for the outcome for multiple fetuses delivered, and this resulted in confidence intervals that were uninterpretable. Therefore, this variable was not included in the final model. Table-3 shows results of multivariable modeling. Odds of receiving contraceptive counseling among women with no previous births (parity=0) were 0.83 times less likely than women who had given birth at least three times previously (parity=3+)(OR: 0.17; 95% CI: 0.05-0.57). Odds of receiving contraceptive counseling among women who had an integrated emergency and surgical officer (IESO) or medical doctor (MD) as a delivery provider were 0.67 time less likely than women whose delivery provider was a midwife (OR: 0.33; 95% CI: 0.11-0.97).

Table 1: Comparisons of maternal characteristics of women overall and by whether data was or was not recorded for contraceptive counseling.

Maternal Characteristics	Total Cohort	Missing Contraceptive Counseling Data	Contraceptive Counseling Data Present	p-value
	N=1000	N = 231 (23.10%)	N = 769 (76.90%)	
	n (column %)	n (column %)	n (column %)	
Educational Status				0.2
Unable to read and write	233 (23.30%)	47 (20.35%)	186 (24.19%)	
Read and write only	54 (5.40%)	8 (3.46%)	46 (5.98%)	
Primary school	399 (39.90%)	104 (45.02%)	295 (38.36%)	
Secondary school	140 (14.00%)	35 (15.15%)	105 (13.65%)	
Higher education	173 (17.30%)	36 (15.58%)	137 (17.82%)	
Unknown[a]	1 (0.10%)	1 (0.43%)	0 (0.00%)	
Residence				0.38
Urban	454 (45.40%)	99 (42.86%)	355 (46.16%)	
Rural	546 (54.60%)	132 (57.14%)	414 (53.84%	
Religion				0.35
Muslim	111 (11.10%)	19 (8.23%)	92 (11.96%)	
Orthodox Christian	336 (33.60%)	81 (35.06%)	255 (33.16%)	
Protestant	549 (54.90%)	128 (55.41%)	421 (54.75%)	
Jehovah Witness	2 (0.20%)	1 (0.43%)	1 (0.13%)	
Unknown	2 (0.20%)	2 (0.87%)	0 (0.00%)	
Marital Status				0.03*
single/widowed/separated	27 (2.70%)	11 (4.76%)	16 (2.08%)	
not single (married/cohabitating)	964 (96.40%)	216 (93.51%)	748 (97.27%)	
Unknown	9 (0.90%)	4 (1.73%)	5 (0.65%)	
Smoke				0.58
Yes	1 (0.10%)	0 (0.00%)	1 (0.13%)	
No	994 (99.40%)	229 (99.13%)	765 (99.48%)	
Unknown	5 (0.50%)	2 (0.87%)	3 (0.39%)	
Alcohol				0.66
Yes	5 (0.50%)	1 (0.43%)	4 (0.52%)	
No	990 (99.00%)	228 (98.70%)	762 (99.09%)	
Unknown	5 (0.50%)	2 (0.87%)	3 (0.39%)	
Transferred during labor[b]				0.29
Yes	492 (49.20%)	120 (51.95%)	372 (48.37%)	
No	506 (50.60%)	109 (47.19%)	397 (51.63%)	
Unknown	2 (0.20%)	2 (0.87%)	0 (0.00%)	
Obstetric High Risk				0.31
Yes	160 (16.00%)	32 (13.85%)	128 (16.64%)	
No	840 (84.00%)	199 (86.15%)	641 (83.36%)	
Method of Delivery				0.21
Unassisted vaginal delivery/spontaneous	716 (71.60%)	156 (67.53%)	560 (72.82%)	
Assisted vaginal/instrumental delivery by forceps	14 (1.40%)	4 (1.73%)	10 (1.30%)	
Assisted vaginal/instrumental delivery by vacuum	29 (2.90%)	11 (4.76%)	18 (2.34%)	
Cesarean delivery	234 (23.40%)	55 (23.81%)	179 (23.28%)	

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Unknown	7 (0.70%)	5 (2.16%)	2 (0.26%)	
Delivery Provider				0.73
Midwife	732 (73.20%)	169 (73.16%)	563 (73.21%)	
Integrated emergency and surgical officer (IESO)/MD[c]	263 (26.30%)	58 (25.11%)	205 (26.66%)	
Unknown	5 (0.50%)	4 (1.73%)	1 (0.13%)	
Antepartum Interventions				0.12
Yes	50 (5.00%)	7 (3.03%)	43 (5.59%)	
No	950 (95.00%)	224 (96.97%)	726 (94.41%)	
Postpartum Complications				<0.0001*
Yes	182 (18.20%)	22 (9.52%)	160 (20.81%)	
No	818 (81.80%)	209 (90.48%)	609 (79.19%)	
Neonatal Complications				0.51
Yes	47 (4.70%)	9 (3.90%)	38 (4.94%)	
No	953 (95.30%)	222 (96.10%)	731 (95.06%)	
Neonatal Sex				0.48
Male	531 (53.10%)	118 (51.08%)	413 (53.71%)	
Female	469 (46.90%)	113 (48.92%)	356 (46.29%)	
Neonatal Status on Day of Discharge				0.05
Alive	935 (93.50%)	207 (89.61%)	728 (94.67%)	
Dead	57 (5.70%)	19 (8.23%)	38 (4.94%)	
Unknown	8 (0.80%)	5 (2.16%)	3 (0.39%)	
Fetal Status at Delivery				0.25
Alive	904 (90.40%)	200 (86.58%)	704 (91.55%)	
Dead	44 (4.40%)	13 (5.63%)	31 (4.03%)	
Unknown	52 (5.20%)	18 (7.79%)	34 (4.42%)	
Parity				<0.0001*
0	428 (42.80%)	135 (58.44%)	293 (38.10%)	
1	263 (26.30%)	38 (16.45%)	225 (29.26%)	
2	144 (14.40%)	29 (12.55%)	115 (14.95%)	
3+	165 (16.50%)	29 (12.55%)	136 (17.69%)	
Gestational Age[d]				0.23
Term	892 (89.20%)	211 (91.34%)	681 (88.56%)	
Preterm	108 (10.80%)	20 (8.66%)	88 (11.44%)	
History of Cesarean Birth				0.72
0	510 (51.00%)	82 (35.50%)	428 (55.66%)	
1	44 (4.40%)	7 (3.03%)	37 (4.81%)	
2+	7 (0.70%)	2 (0.86%)	5 (0.65%)	
Unknown	439 (43.90%)	140 (60.61%)	299 (38.88%)	
Number of Antenatal Visits				0.09
0	20 (2.00%)	8 (3.46%)	12 (1.56%)	
<4	300 (30.00%)	63 (27.27%)	237 (30.82%)	
4+	680 (68.00%)	160 (69.26%)	520 (67.62%)	
Number of Fetuses Delivered				0.19
Single	948 (94.80%)	213 (92.21%)	735 (95.58%)	
Multiple	49 (4.90%)	15 (6.49%)	34 (4.42%)	
Unknown	3 (0.30%)	3 (1.30%)	0 (0.00%)	

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	mean (sd)	mean (sd)	mean (sd)	
Maternal Age (years)	24.63 (4.70)	24.05 (4.62)	24.80 (4.70)	0.03*
Number of Days Hospitalized, Mother	1.86 (1.90)	1.83 (1.55)	1.87 (2.00)	0.8

*significant at p<0.05
aunknown values not considered in p-value calculations
btransferred during labor to Mizan Tepi University Teaching Hospital from another clinical setting for higher level of care
cincludes general practitioners, Ob/Gyn residents, and Ob/Gyn attendings
dterm births characterized as those delivered at 37 weeks or more; preterm less than 37 weeks

Table 2: Comparison of maternal characteristics of women overall and by whether contraceptive counseling was or was not received.

Maternal Characteristics	Total Cohort	Received Counseling	Did Not Receive Counseling	p-value
	N=769	N=35 (4.55%)	N=734 (95.45%)	
	n (column%)	n (column %)	n (column %)	
Educational Status				0.52
Unable to read and write	186 (24.19%)	11 (31.43%)	175 (23.84%)	
Read and write only	46 (5.98%)	0 (0.00%)	46 (6.27%)	
Primary school	295 (38.36%)	12 (34.29%)	283 (38.56%)	
Secondary school	105 (13.65%)	5 (14.29%)	100 (13.62%)	
Higher education	137 (17.82%)	7 (20.00%)	130 (17.71%)	
Residence				0.52
Urban	355 (46.16%)	18 (51.43%)	337 (45.91%)	
Rural	414 (53.84%)	17 (48.57%)	397 (54.09%)	
Religion				0.81
Muslim	92 (11.96%)	6 (17.14%)	86 (11.72%)	
Orthodox Christian	255 (33.16%)	11 (31.43%)	244 (33.24%)	
Protestant	421 (54.75%)	18 (51.43%)	403 (54.90%)	
Jehovah Witness	1 (0.13%)	0 (0.00%)	1 (0.14%)	
Marital Status				0.38
single/widowed/separated	16 (2.08%)	0 (0.00%)	16 (2.18%)	
not single (married/cohabitating)	748 (97.27%)	34 (97.14%)	714 (97.28%)	
Unknowna	5 (0.65%)	1 (2.86%)	4 (0.54%)	
Smoke				0.91
Yes	1 (0.13%)	0 (0.00%)	1 (0.14%)	
No	765 (99.48%)	35 (100.00%)	730 (99.46%)	
Unknown	3 (0.39%)	0 (0.00%)	3 (0.41%)	
Alcohol				0.85
Yes	4 (0.52%)	0 (0.00%)	4 (0.54%)	
No	762 (99.09%)	35 (100.00%)	727 (99.05%)	
Unknown	3 (0.39%)	0 (0.00%)	3 (0.41%)	
Transferred during laborb				0.98
Yes	372 (48.37%)	17 (48.57%)	355 (48.37%)	
No	397 (51.63%)	18 (51.43%)	379 (51.63%)	
Obstetric High Risk				0.59
Yes	128 (16.64%)	7 (20.00%)	121 (16.49%)	
No	641 (83.36%)	28 (80.00%)	613 (83.51%)	
Method of Delivery				0.19

Unassisted vaginal delivery/spontaneous	560 (72.82%)	31 (88.57%)	529 (72.07%)	
Assisted vaginal/instrumental delivery by forceps	10 (1.30%)	0 (0.00%)	10 (1.36%)	
Assisted vaginal/instrumental delivery by vacuum	18 (2.34%)	0 (0.00%)	18 (2.45%)	
Cesarean delivery	179 (23.28%)	4 (11.43%)	175 (23.84%)	
Unknown	2 (0.26%)	0 (0.00%)	2 (0.27%)	
Delivery Provider				0.047*
Midwife	563 (73.31%)	31 (88.57%)	532 (72.58%)	
Integrated emergency and surgical officer (IESO)/MD[c]	205 (26.69%)	4 (11.43%)	201 (27.42%)	
Antepartum Interventions				0.97
Yes	43 (5.59%)	2 (5.71%)	41 (5.59%)	
No	726 (94.41%)	33 (94.29%)	693 (94.41%)	
Postpartum Complications				0.16
Yes	160 (20.81%)	4 (11.43%)	156 (21.25%)	
No	609 (79.19%)	31 (88.57%)	578 (78.75%)	
Neonatal Complications				0.56
Yes	38 (4.94%)	1 (2.86%)	37 (5.04%)	
No	731 (95.06%)	34 (97.14%)	697 (94.96%)	
Neonatal Sex				0.53
Male	413 (53.71%)	17 (48.57%)	396 (53.95%)	
Female	356 (46.29%)	18 (51.43%)	338 (46.05%	
Neonatal Status on Day of Discharge				0.31
Alive	728 (94.67%)	32 (91.43%)	696 (94.82%)	
Dead	38 (4.94%)	3 (8.57%)	35 (4.77%)	
Unknown	3 (0.39%)	0 (0.00%)	3 (0.41%)	
Fetal Status at Delivery				0.19
Alive	704 (91.55%)	32 (91.43%)	672 (91.55%)	
Dead	31 (4.03%)	3 (8.57%)	28 (3.81%)	
Unknown	34 (4.42%)	0 (0.00%)	34 (4.63%)	
Parity				0.01*
0	293 (38.10%)	4 (11.43%)	289 (39.37%)	
1	225 (29.26%)	13 (37.14%)	212 (28.88%)	
2	115 (14.95%)	8 (22.86%)	107 (14.58%)	
3+	136 (17.69%)	10 (28.57%)	126 (17.17%)	
Gestational Age[d]				0.99
Term	681 (88.56%)	31 (88.57%)	650 (88.56%)	
Preterm	88 (11.44%)	4 (11.43%)	84 (11.44%)	
History of Cesarean Birth				0.85
0	428 (55.66%)	30 (85.71%)	398 (54.22%)	
1	37 (4.81%)	1 (2.86%)	36 (4.90%)	
2+	4 (0.52%)	0 (0.00%)	4 (0.54%)	
Unknown	299 (38.88%)	4 (11.43%)	295 (40.19%)	
Number of Antenatal Visits				0.43
0	12 (1.56%)	1 (2.86%)	11 (1.50%)	
<4	237 (30.82%)	14 (0.40%)	223 (30.38%)	
4+	520 (67.62%)	20 (57.14%)	500 (68.12%)	

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Number of Fetuses Delivered				0.19
Single	735 (95.58%)	35 (100.00%)	700 (95.37%)	
Multiple	34 (4.42%)	0 (0.00%)	34 (4.63%)	
	mean (sd)	mean (sd)	mean (sd)	
Maternal Age (years)	24.63 (4.70)	25.66 (4.45)	24.76 (4.71)	0.25
Number of Days Hospitalized, Mother	1.86 (1.90)	2.80 (5.72)	1.82 (1.62)	0.32

*significant at p<0.05
[a]unknown values not considered in p-value calculations
[b]transferred during labor to Mizan Tepi University Teaching Hospital from another clinical setting for higher level of care
[c]includes general practitioners, Ob/Gyn residents, and Ob/Gyn attendings
[d]term births characterized as those delivered at 37 weeks or more; preterm less than 37 weeks

Table 3: Multivariable model of characteristics associated with contraceptive counseling (N=1000).

Characteristic	Odds Ratio	95% Confidence Interval
Parity		
0 vs 3	0.17	0.05, 0.57*
1 vs 3	0.76	0.32, 1.81
2 vs 3	0.89	0.33, 2.35
Delivery Provider		
MD/IESO vs Midwife	0.33	0.11, 0.97*
Fetal Status at Delivery		
Alive vs Dead	0.38	0.10, 1.39
*significant at p < 0.05; null excluded within 95% CI		

Discussion

Most women at MTUTH do not receive contraceptive counseling. While this finding is concurrent with trends of underutilization of family planning services in major Ethiopian hospitals, a prevalence of less than five percent suggests room for overall improvement, enforcement, and prioritization of contraceptive counseling within the organization. Analysis of missing contraceptive counseling data revealed potential areas of focus for the hospital. Whether or not a woman had data recorded significantly differed by marital status, postpartum complications, parity, and maternal age. While it is unclear why a woman may have been exempted from the collection of this measure (i.e. different discharge procedures, elected not to respond, etc.), these factors present opportunities for investigation as to the cause of these differences. It should also be noted that though maternal age was statistically significant, the clinical significance of this finding is less valid (24.05 years vs 24.80 years). Examination of predictors of contraceptive counseling among those women who did have data recorded revealed that women whose delivery providers were midwives, were more likely to receive counseling. Not only was parity associated with increased likelihood of having contraceptive counseling data recorded, but it also increased the odds of receiving contraceptive counseling as the parity level increased. This finding was consistent with the literature and indicates that parity may influence provider motivation to provide counseling. Additionally, studies suggest that reported desire to limit births rises dramatically at parities two and three among women [15]. As mentioned, the frequency breakdown between counseling groups limited the potential for covariate inclusion in this study. Another limitation of this analysis was that we could only consider the variables in our dataset, and this survey was designed to assess many other pregnancy outcomes outside of family planning. Therefore, no data was collected surrounding previous contraception practices or knowledge among the women in addition to what type of contraception the women started, if they did. Some women may have received contraceptive counseling in hospital and a subsequent tubal ligation during the delivery. These women would not have likely received contraceptive counseling upon discharge, and these nuances are not documented in the data set. Future analyses should control for sterilization procedures, if possible, and collect more information regarding existing contraception knowledge and practices among women to better address any information biases. Due to the method of recruitment, sampling bias likely compromised the generalizability of this study to the larger Ethiopian population. However, for the purposes of this study as a hospital-specific quality improvement project, this bias was not important to control for. Lastly, we were also limited in our understanding and insight into the specific discharge procedures at Mizan-Tepi University Teaching Hospital and the quality of contraceptive counseling that clients receive. Therefore, quality assumptions or proposals for hospital-specific intervention development were limited. Despite these drawbacks, this study adds to the body of literature outlining the disparities in contraceptive counseling and proposes potential contributors to low rates of contraception use despite high rates of unplanned pregnancies in Ethiopia. Quality family planning services, which include contraceptive services, pregnancy testing and counseling, helping clients who want to conceive, and providing infertility, preconception, and sexually transmitted disease services, have been proven to increase knowledge and awareness among clients and providers, decrease bias, and reduce maternal and infant morbidity and mortality [16]. This project focuses on MTUTH and the communities of women that it

serves. While the goal is to improve contraceptive counseling overall, identifying overlooked populations of women allows hospital leadership to develop targeted discharge procedures to increase contraception education, awareness, and access. Findings such as these can be used to address the larger issues of underutilization of family planning services by proposing opportunities for intervention development and improving maternal and infant health in Ethiopia.

Conclusion

Contraceptive counseling is a service that remains vastly underutilized in Ethiopia. Room for overall improvement is evident as reflected by the prevalence of less than five percent of women receiving counseling at MTUTH. Improving the provision rate and quality of family planning services for all women across all demographics is necessary to support thoughtful and well-informed decisions surrounding contraception. Health care facilities should train providers and integrate conversations surrounding contraception into workflows and discharge procedures, paying special attention to disparities in contraception counseling provision. Future studies should look to characterize the quality of contraceptive counseling in Ethiopia more broadly and suggest specific avenues for intervention development.

References

1. United Nations. Economic and Social Affairs. Trends in contraceptive use Worldwide 2015-UN (2015).

2. Wakuma B, Mosisa G, Etafa W, et al. Postpartum modern contraception utilization and its determinants in Ethiopia: A systematic review and meta-analysis. PloS one 15 (2020): e0243776.

3. Tukue D, Gebremeskel TG, Gebremariam L, et al. Prevalence and determinants of modern contraceptive utilization among women in the reproductive age group in Edaga-hamus Town, Eastern zone, Tigray region, Ethiopia, June 2017. PloS one 15 (2020): e0227795.

4. Ethiopian Public Health Institute, ICF. Ethiopia mini demographic and health survey 2019: key indicators. EPHI and ICF Rockville, Maryland, USA (2019).

5. Unintended pregnancy in the United States. Guttmacher Institute (2019).

6. Asresie MB, Fekadu GA, Dagnew GW. Contraceptive use among women with no fertility intention in Ethiopia. PloS one 15 (2020): e0234474.

7. Abraha TH, Teferra AS, Gelagay AA. Postpartum modern contraceptive use in northern Ethiopia: prevalence and associated factors. Epidemiology and health 39 (2017): e2017012.

8. Worku SA, Ahmed SM, Mulushewa TF. Unmet need for family planning and its associated factor among women of reproductive age in Debre Berhan Town, Amhara, Ethiopia. BMC research notes 12 (2019): 143

9. Tadele A, Abebaw D, Ali R. Predictors of unmet need for family planning among all women of reproductive age in Ethiopia. Contraception and reproductive medicine 4 (2019): 6.

10. Abdulreshid M, Dadi HB. Assessment of Family Planning Counseling Provided for Postpartum Women and Associated Factors. Int J Reprod Med 2020 (2020): 2649340.

11. Judge S, Peterman A, Keesbury J. Provider determinants of emergency contraceptive counseling and provision in Kenya and Ethiopia. Contraception 83 (2011): 486-490.

12. Teshome A, Wondafrash M, Gashawbeza B, et al. Post-abortion contraceptive adoption in Ethiopia. Int J Gynaecol Obstet 154 (2021): 157-161.

13. Handebo S. Informed Choice of Contraceptive Methods among Women in Ethiopia: Further Analysis of the 2016 Ethiopian Demographic Health Survey. Open Access J Contracept 12 (2021): 83-91

14. Mena Tesfaledet. Women's empowerment and associated factors on contraceptive use in Sheka and Bench Maji zone, South West Ethiopia 8 (2019): 106-114.

15. Bradley S, Schwandt H, Khan S. Levels, Trends, and Reasons for Contraceptive Discontinuation, Calverton, MD, USA: ICF Macro (2009).

16. Centers for Disease Control and Prevention. (n.d.). Providing quality family planning services: Recommendations of CDC and the U.S. Office of Population Affairs. Centers for Disease Control and Prevention (2021).