

Magnitude of provider initiated HIV testing and counseling among pregnant women and its associated factors in arsi zone, Ethiopia.

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Abstract

Background: HIV Counseling and Testing (HCT) is mandatory for prevention, care, and treatment and support services among pregnant women. However its uptake is low in Ethiopia therefore this study tried to assess the gaps in Arsi zone on factors affecting utilization of provider initiated HIV testing and counseling among pregnant women.

Objectives: To assess utilization of Provider Initiated HIV Testing and Counseling (PITC) and associated factors among pregnant women attending antenatal care service.

Methods: Facility based cross-sectional study was conducted among 354 pregnant women attending antenatal care (ANC) service in randomly selected public health facilities of Arsi Zone from June 1 to July 30 2018.

Results: In this study, magnitude of Provider Initiated HIV Testing and Counseling (PITC) utilization was 85%. Women with primary education were 4.89 times more likely to utilize PITC as compared to those with no formal education. Women who were government employee were 4.82 times more likely to utilize PITC as compared to unemployed women; women in third trimester of pregnancy were 3.69 times more likely to utilize PITC as compared to those in their first trimester of pregnancy. While urban residents were 66% less likely to utilize PITC as compared to rural residents.

Conclusion and Recommendation: In our study magnitude of PITC utilization was 85%. Educational level, occupation, trimester of pregnancy and residence were predictors of PITC utilization among pregnant women. Counseling and testing should be strengthened to promote PITC utilization among pregnant women to reduce HIV transmission.

Keywords: HIV, Gels, Carrageenan, Gelling agent, Calendula oil.

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Introduction

HIV Counseling and Testing (HCT) is mandatory for prevention, treatment and support services. Currently, most people remain unaware of their HIV status due to various reasons. However, with the development of affordable and effective medical care for people living with HIV, demand for testing is increasing rapidly, creating urgent need to increase access. The availability of HCT services in Ethiopia has been uneven, and even when available, uptake has been relatively low.

Opt out HIV testing and counseling has benefits to the community as well as the individual when a person learns of his or her HIV infection. Many people reduce their HIV risk behaviors to prevent their HIV risk behavior to reduce transmission to their partners. HIV counseling and testing in relation to pregnancy and other reproductive health services may prove a valuable entry point for provision of counseling and voluntary testing to the wider community. Some reproductive health settings such as STI (sexually transmitted infection) clinics, pediatrics services and family planning clinics may provide an opportunity to offer testing to mothers and fathers of children, while antenatal services will allow

testing to be offered to women already pregnant and their partners.

Counseling and voluntary testing for HIV have benefits beyond the prevention of transmission from mother to child. These services have been shown to contribute to an increase in safe behavior at the individual level, and are likely also to reduce the ignorance, stigma and fear associated with HIV infection in the population at large. Thus WHO recommends all pregnant women at ANC unit has to be tested for HIV to make infant HIV infection 0 by 2020.

In Ethiopia, there are a limited number of studies that have been conducted regarding provider initiated HIV testing and counseling (PITC) in antenatal care (ANC) clinics. Many, but not all, clients accept PITC. The service and client factors need to be known and gain acceptance to improve the service. Thus, an understanding of these factors could help promote PITC among ANC clients. Therefore, the aim of this study will be to assess the factors that affect the utilization of PITC among clients attending ANC unit in selected public health facilities in Arsi Zone, Ethiopia [1-4].

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Materials and Methods

Study area

The study was conducted in 20 selected public health facilities of Arsi Zone. Arsi Zone is one of zone of Oromia Region in Ethiopia with total population of 3,466,667 and expected pregnant women 120,293. The Zone contains 26 woredas and one administrative town, with 553 kebeles. It has 6 Primary hospitals and 105 health centers and 1 referral hospital all of which are governmental. The Zone is located an average distance of 175 km from Addis Ababa the capital of Ethiopia.

Study design and period

Facility based cross-sectional study design was used from June 1 to July 30 2018.

Source and Study population

Source population: Source population were pregnant women attending ANC unit in selected public health facilities

Study population: The study population comprises randomly selected pregnant women visiting ANC unit in selected public health facilities during the study period.

Inclusion criteria

Pregnant women who received antenatal care services during the study period.

Exclusion criteria

Pregnant women who were unable to hear, or with other disabilities such as impaired communication ability.

Sample size and sampling procedures

Sample size determination: Sample size for the first objective was determined using the formula for single population

$$n = z^2pq / d^2$$

Where:

n = the desired sample size when the target population is over ten thousand people.

z = the standard normal deviate corresponding to 95% confidence interval (z=1.96).

p = the proportion of the target population estimated to have the characteristics

Being investigated [p = 0.701 taken from a research done in Adama 2016)

q = the proportion of the target population without the characteristics (Usually given by 1-p)

d = margin of error at 95% confidence interval (0.05)

$$\text{Thus } n = 1.96^2 \times 0.701 \times 0.299 / 0.0025 = 322$$

This figure was adjusted for non-response rate 10% $322 + 32 = 354$

Sample size for the second specific objective

Alternatively, the double population proportion formula was used to calculate the required sample size of health facilities having pregnant women considering Residence of mothers and Number of ANC visit as the two major determinant factors of PIHTC utilization at ANC unit. At 80% power, the sample size was calculated as follows.

Major variables	Confidence interval	P1	P2	OR	Ratio(un exposed : exposed)	Sample size
Residence of mothers	0.95	0.546	0.7256	2.18	1	246
Number of ANC visit	0.95	82.7	56.94	0.28	1	114

Table 1. Sample size calculation for the second objective HIV for utilization of provider initiated HIV testing and counseling among pregnant women visiting ANC Unit in Public health facilities in Arsi Zone 2018.

Where, P1-the percentage of pregnant women in unexposed (urban and who have not utilized PIHTC), P2-the percentage of pregnant women in exposed (among rural residents and more ANC visits and who utilized PITC. Since the sample size for each of these variables was calculated to be smaller than the size calculated for the single population proportion formula, the 354 remained the appropriate sample size for this study.

Sampling procedure: There are 26 woredas in Arsi Zone in order to have a fairly representative sample, three woredas (Munesa, LemuBilbilo and Sude) were selected using simple random method and all public health facilities from the selected woredas were included from 20 selected health facilities with a total of 354 study samples were selected using systematic sampling method (every 8 woman were selected).

Variables of the study

Dependent variable: Utilization of provider Initiated HIV testing and counselling independent variables. The independent variables for the utilization of PITC among pregnant women were listed as follows.

Socio-demographic factors like age, religion. Marital status, educational status, residence, ethnicity, occupation, and monthly income, and attitude, knowledge characteristics Knowledge about HIV, MTCT and routine HTC, Knowledge on the perceived benefit of HCT and Knowledge on perceived risk of HIV, stigma, discrimination fear and perceived benefit among. Institutional characteristics the independent variables were availability of service, accessibility of service and confidentiality.

Operational definitions

Knowledge; those who answered 6 and above out of 10 questions designed to assess knowledge of pregnant women related to HIV /AIDS and mother to Child Transmission of HIV were considered to be having good knowledge.

Attitude; Those who answered 6 and above out of 10 questions designed to assess attitude towards HIV/AIDS and routine HTC were considered as having good attitude [5].

Data collection procedures

Data were collected through an interactive process between the respondent and the data collector using interview guides. Structured and pre tested questionnaire was used to collect data. These were conducted for those pregnant women randomly selected and who fitted in the inclusion criteria. The interviews elicited the respondent views on the socio-demographic factors determining PITC among pregnant women, their knowledge level on HIV, MTCT and PMTCT, attitude and practice and institutional factors associated with utilization of routine HTC. Exit interview was held for the pregnant women soon after the ANC service is provided.

Data quality assurance

Questionnaires were first prepared in English language by the investigator and later was translated to local language and retranslated by other translator to English to compare the similarity. Prior to the actual data collection the questionnaire was pre tested on 5% similar population in health facilities of Assela Town Data collectors were diploma nurses who can speak the local language and four supervisors were assigned. Data collectors were trained for two days on the study instrument and data collection procedure. During the actual data collection process supervisors cross checked the data on randomly selected health facilities every day for completeness, missed variables, validity and reliability of data.

Data processing and analysis

After data collection each questionnaire was checked for completeness and code was given before data entry and incomplete questionnaires was excluded. Data entered in to Epi info version 3.1, cleaned, explored for outliers, missed values and missed variables and analyzed using SPSS version 21. Bivariate analysis was performed and then those variables that showed p value of <0.25 were analyzed by multivariate model and significant association with the outcome variables at 95% CI and P- value < 0.05 was concluded.

Ethical considerations

Ethical clearance was initially obtained from Arsi University, College of Health science and Department of Public Health. Further written consent was secured from the regional and zonal health department. Official letter was written to each health institution from zonal health department, and then informed verbal consent from pregnant women attending ANC

unit was sought after brief explanation of the purpose of the study.

Results and Discussion

Socio-demographic characteristics of pregnant women

A total of 354 participants were recruited with 100% response rate. Among the total respondents 208(58.8%) of them were from rural area. The majority of the study participants were from Oromo ethnic group which is about 305(85.6%), the illiteracy rate accounts for 156(44.1%) while 147(41.5%) attended primary education and unemployed rate was 262(74%). Regarding religion of respondents 178(50.2%) of the respondents were Muslims and the rest were Christians 176(49.7). Three hundred twenty four (95.5%) of the respondents were married and majority of the respondents were young with age range 25-34 162(45.8%) [Table 2].

Characteristics	Categories	Frequency	Percent %
Age	15-24	137	38.7
	25-34	162	45.8
	35-49	55	15.5
Residence	Urban	146	41.2
	Rural	208	58.8
Religion	Orthodox	142	40.1
	Muslim	178	50.3
	Protestant	34	9.6
Ethnicity	Oromo	305	86.2
	Amara	37	10.5
	Garage	12	3.4
Occupation	Private employee	56	15.8
	Government employee	36	10.2
	Unemployed	262	74
Marital status	Single	10	2.8
	Married	324	95.5
	Divorced	20	5.6
Education	No formal education	156	44.1
	Primary education	147	41.5
	Secondary and above	51	14.4

Table 2. Socio-demographic Characteristics for utilization of provider initiated HIV testing and counseling among pregnant women visiting ANC Unit in Public health facilities in Arsi Zone 2018.

Reproductive health characteristics of pregnant women

Among the interviewed women 129 (36%) of them were in their first antenatal care visit and 104(29.4%) of them were primigravida and 146 (41.2%) of them were in the second trimester of pregnancy [Table 3].

Characteristics	Categories	Frequency	Percent %
Gravidity	One	104	29.4
	Two	102	28.8
	Three	76	21.5
	Four and above	72	20.3
No of Ante natal care visit	One	129	36.4
	Two	110	31.1
	Three	82	23.2
	Four and above	33	9.3
Trimester of the pregnancy	First	97	27.4
	Second	146	41.2
	Third	111	31.4

Table 3. Reproductive health Factors for utilization of provider initiated HIV testing and counseling among pregnant women visiting ANC Unit in Public health facilities in Arsi Zone 2018.

Knowledge characteristics of pregnant women

On the distribution of respondents by knowledge about HIV/AIDS and its transmission it's reported that 330 (93.2%) of them heard about HIV/AIDS. Two hundred seventy eight (78.5%) indicated that HIV can be transmitted through sexual intercourse and 233(65.8%) of them reported that HIV/AIDS is not cured. This means that the underlying population in the study area had good knowledge about HIV transmission. Regarding the distribution of respondents by knowledge about PMTCT and MTCT it is recognized that 276(78%) reported that mother can transmit HIV during pregnancy. This means that more than half of the underlying populations have good knowledge on MTCT of HIV [Table 4].

Knowledge indicators	Response	Frequency	Percent %
Ever heard of HIV AIDS	Yes	330	93.2
	No	24	6.8
Ways of HIV transmission			
Sexual intercourse	Yes	278	78.5
	No	76	21.5
MTCT	Yes	254	71.8
	No	100	28.2

During transfusion	Blood	Yes	261	73.7
		No	93	26.3
Using materials	sharp	Yes	203	57.3
		Yes	151	42.7
Can HIV AIDS be cured		Yes	92	25.9
		No	233	65.8
		I don't know	29	8.3
Ways of MTCT of HIV				
whether a pregnant woman with HIV transmit the virus to her child		Yes	277	78.2
		No	36	10.2
		I don't know	41	11.6
Ways of MTCT of HIV				
During pregnancy		Yes	276	78
		No	178	22
At child birth		Yes	236	66.7
		No	118	33.3
During breastfeeding		Yes	240	67.8
		No	114	32.2
Ways of intervention of MTCT of HIV				
Through use of antiretroviral drugs		Yes	243	68.6
		No	111	31.4
Avoid breast feeding		Yes	80	22.6
		No	274	77.4
Knowledge category		Good	237	66.9
		Poor	117	33.1

Table 4. Mother to Child Transmission of HIV, Knowledge of mothers on MTCT of HIV for utilization of provider initiated HIV testing and counseling among pregnant women visiting ANC Unit in Public health facilities in Arsi Zone 2018.

Attitude characteristics of pregnant women

Respondents responses related to attitude shows that 289(81.8%) reported that they had chance of HIV infection. Two hundred three (57.3%) of them talk to their partner before testing for HIV while 271(76.6%) tells the result of their HIV test to their partner after HIV test result was received. Three hundred sixteen (89.3%) of respondents said that routine HTC will be increased if pregnant women are educated on HTC. This means that the respondents have good attitude towards HIV/AIDS and routine HTC [Table 5].

Characteristics	Response	Frequency	Percent %
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Chances of HIV infection(risk perception)	Yes	289	81.6
	No	65	18.4
About talking to partner before having HIV test	Yes	203	57.3
	No	151	42.7
About telling to partner the test result of an HIV / AIDS test	Yes	271	76.6
	No	83	23.4
whether religion contributes to HTC Utilization	Yes	255	72
	No	159	28
If education on the routine HTC increase the acceptance	Yes	316	89.3
	No	38	10.7
whether HTC is important for pregnant women	Yes	316	89.3
	No	38	10.7
Attitude category	Good	263	74.2
	Poor	91	25.8

Table 5. Responses related to Attitude HIV for utilization of provider initiated HIV testing and counseling among pregnant women visiting ANC Unit in Public health facilities in Arsi Zone 2018.

Practice characteristics of pregnant women

Respondents practice on routine HCT shows that 130(42.3%), received HIV test to protect the newborn. It is observed that 333(94.1%) of the respondents indicated that they received counseling before HIV testing. This means the health care providers serving the underlying population in the study area provided counseling before HIV testing. While 326 (92.1%) reported that they were satisfied with the pretest counseling. About 4/5th (80%) said that they have received posttest counseling. This result shows that the respondents have good practice towards routine HTC [Table 6].

Characteristics	Category	Response	Percent %
Last time HIV test done	last month	114	37.1
	Between 1 and 2 months	109	35.5
	Between 3-5 months	61	19.9
	5 months and above	25	7.5
Reason for HIV testing	Marriage	77	25.2
	To protect the new born	130	42.3
	To protect my partner	40	13
	To know my status	55	17.9
	Others	5	1.6

Whether HIV testing voluntary or requested	Voluntary	157	51.1
	Requested	150	48.9
Accept subsequent routine HIV during current pregnancy	Yes	301	85.0
	No	53	15.0
About receiving counseling before testing	Yes	333	94.1
	No	21	5.9
If satisfied with HIV counseling given	Yes	326	92.1
	No	28	7.9
If knows someone who had been tested for HIV virus	Yes	36	86.4
	No	48	15.6
About receiving counseling after getting test result	Yes	330	80.8
	No	24	19.2
Ways preferred to obtain HIV test result	Face to face (verbally)	316	89.3
	Written on the maternity Card	12	3.4
	Through relative or partner	26	7.3

Table 6. Responses related to Practice HIV for utilization of provider initiated HIV testing and counseling among pregnant women visiting ANC Unit in Public health facilities in Arsi Zone 2018.

Characteristics	Response	Frequency	Percent %
Does HTC service available in nearby HF?	Yes	302	85.3
	No	52	14.7
Place where HTC is taken by pregnant woman	Government institutions	327	92.4
	Private institutions	27	7.6

Table 7. Responses related to institutional Characteristics HIV for utilization of provider initiated HIV testing and counseling among pregnant women visiting ANC Unit in Public health facilities in Arsi Zone 2018.

Factors related to utilization of PITC

Women with primary education were 4.89 times more likely to utilize PITC as compared to those with no formal education (AOR=4.892,95%CI:2.159-11.082,P<0.0001) women who were government employee were 4.82 times more likely to utilize PITC as compared to unemployed women (AOR=4.827,95%CI:1.528-15.244,p=0.007) women in third trimester of pregnancy were 3.69 times more likely to utilize PITC as compared to those in their first trimester of pregnancy

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(AOR=3.695,95%CI;1.332-10.254, p=0.012. While urban residents 66% less likely to utilize PITC as compared to rural residents (AOR=0.34,95%CI;0.167-0.728, p=0.005) [Table 8].

Characteristics	Category	Frequency of PTIC utilization		COR(95% CI)	AOR(95% CI)
		Yes	No		
Marital status	single	6	4	1(0.212-4.709)	2.222(0.230-21.438) 21.438 .230 21.438
	Married	283	41	0.217(0.84-0.563)	1.620(0.348-7.546)
	Divorced	12	8	1	1
Educational status	No formal education	145	11	1	1
	Primary	107	40	4.9(2.417-10.048)	4.892(2.159-11.082)*
	Secondary and above	49	2	0.54(0.115-2.512)	0.380(0.065-2.215)
Occupational status	Private employee	48	8	1.3(0.577-2.108)	1.00(.372-2.718)
	Government employee	20	16	6.4(2.999-13.776)	4.827(1.528-15.244)*
	Unemployed	233	29	1	1
Gravidity	One	95	9	1	1
	Two	92	10	1.03(0.441-2.416)	0.883(0.310-2.517)
	Three	63	13	1.4(0.575-3.328)	1.872(0.669-5.242)
	Four	51	21	2.8(1.248-6.255)	2.823(0.921-8.656)
Trimester of pregnancy	First	89	8	1	1
	Second	131	15	1.3(0.518-3.131)	1.792(669-4.798)
	Third	81	30	4.1(1.786-9.508)	3.695(1.332-10.254)*
Residence	Urban	118	24	1.74(0.966-3.124)	0.349(0.167-0.728)*
	Rural	183	25	1	1

Table 8. *Bivariate and multivariable analysis HIV for utilization of provider initiated HIV testing and counseling among pregnant women visiting ANC Unit in Public health facilities in Arsi Zone 2018.*

Discussion

The study assessed PITC utilization and associated factors among pregnant women attending antenatal unit in selected public health facilities in Arsi Zone, Ethiopia. The utilization level of 85% was higher than the testing level of 70.1% which

is indicated by a research conducted in health facilities of Adama Town Ethiopia 2016(27). This indicates that the progress in scaling up of HIV testing services helps in increasing HIV testing level in Ethiopia.

However, still nearly 15% of the study participants did not utilize PITC, which was worrisome. Rejecting or delaying HIV testing among the pregnant women suggests the need for intervention program to increase PITC utilization, which reduces the transmission of HIV from mother to children.

Primary education levels contributed to high utilization of PITC as compared to those with no formal education and this finding was in line with previous studies done in Zambia (21).

Regarding employment status women who are government employee, were more likely to utilize PITC as compared to those of unemployed and this finding was in line with previous studies done in Ethiopia.

Trimester of the current pregnancy was found to be associated with the utilization of PITC, women in their third trimester of their pregnancy were observed to be more likely to utilize provider initiated HIV counseling and testing and this finding was similar with the previous study in Kenya .

Women in rural area are more likely to utilize PITC as compared to those who reside in the urban area and this finding was contradictory from two previous studies in Ethiopia which indicated women in urban utilize PITC more likely than those in rural area.

Limitation

Since it was a cross-sectional study in which causal relationship could not be assessed

Conclusion

Based on the findings of the study we concluded that in our study magnitude of PITC utilization was 85%. Educational level, Occupation, trimester of pregnancy and residence were predictors of PITC utilization among pregnant women.

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