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Induced Abortion Among Reproductive Age Group Women in Health Facilities of Wolaita Sodo, South Ethiopia

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Abstract: There has been a significant reduction of abortion rates in high-income nations, while the rates remain unchanged in low-and middle-income countries. Post-abortion complications from induced abortion continued as the significant health burden of women in the reproductive age group in Ethiopia. This study aimed to assess factors associated with induced abortion among the reproductive age group in health facilities of Wolaita Sodo, 2020. A facility-based cross-sectional study among women who seek post-abortion care service was conducted from February-to-July, 2020. A systematic random sampling technique was used to select 362 women. Data were collected using a pre-tested structured interviewer-administered questionnaire. Epi data version 3.1 and SPSS version 23 were used for data entry and analysis. Descriptive statistics, followed by a multivariable logistic regression analysis were performed. In this study, 20.8% women experienced induced abortion. Being single {AOR: 5.8; 95% CI: (2.785, 11.898)}, having no formal education {AOR: 0.20; 95% CI: (0.050, 0.795)}, having current pregnancy order of ≥4 {AOR: 4.128; 95%CI: (1.597, 10.666)}, and unwanted pregnancies {AOR: 4.21; 95%CI: (1.432, 6.453)} were significantly associated with experiencing induced abortion. Being single, illiterate, having unwanted pregnancy and having four or more pregnancies were positively associated with induced abortion. Efforts to reduce induced abortion need to focus on increasing accessibility of contraception and fertility education by considering single, illiterate, and those who have four or more pregnancy history.

Keywords: Induced Abortion, Reproductive Age Women, Ethiopia

1. Introduction

Induced abortion is defined as surgical or medical intentionaltermination of a live fetus before the time of viability [1]. Induced abortion can be safe or unsafe. Globally, 25% of pregnancies ended in abortion and the global annual rates of abortion were estimated at 35 abortions per 1000 women of childbearing age [2, 3]. An estimated 56 million induced abortions occurred each year globally. In all, safe abortion and unsafe abortion estimated as 55% and 45% each year, respectively [4].

There has been a significant reduction of abortion rates in high-income countries, while the rates remain unchanged in low- and middle-income countries [3]. In sub-Saharan Africa (SSA), many women use abortion as a means of family planning methods [5]. Worldwide, an estimated 5 million women of reproductive age group are hospitalized annually for the treatment of complications resulting from abortion,

and Africa accounts for 1.7 million of this figure. Induced abortion accounts for approximately 14% of all maternal deaths in Africa [6, 7]. It is also noted that almost all abortion-related maternal deaths occur in developing countries [7].

To reduce unsafe induced abortion, Ethiopia has permitted abortion in specific legal circumstances when the conception of the fetus is caused by rape, incest, when the continuation of pregnancy endanger the mother's life, if the fetus has an incurable deformity or if the mother doesn't fit to give birth mentally or physically [5, 8]. The safe induced abortion rate in this country increased from 22 to 28 per 1000 women of reproductive age between 2008 and 2014. On the other hand, the number of women seeking treatment for post-abortion complications increased from 52,600 in 2008 to 103,600 cases in 2014 [9].

Despite recent changes in abortion law in Ethiopia, the burden of post-abortion complications from induced

abortion continued as the significant health burden of women in the reproductive age group [10, 11]. Research has revealed that the problem of post-abortion complications consumed a great percentage of the reproductive health budget In Ethiopia [12]. Ethiopia has the 5th largest maternal mortality, where abortion accounts for 32% of it [13]. So, the reduction of morbidity from abortion has not yet been achieved.

To prevent induced abortion, it is important to identify factors associated with induced abortion. However, abortion-related issues, were not well emphasized. Thus, this study aimed to assess factors associated with induced abortion in health facilities of WolaitaSodo Town, Southern Ethiopia. Such information may help inform the policy makers to attune their service to better reach women specifically at risk of induced abortion.

2. Materials and Methods

2.1. Study Area and Period

A facility-based cross-sectional study was conducted in WolaitaSodo university referral Hospital (WSUTRH) and Sodo Christian hospitalfrom February-July 2020. All hospitals are found in the WolaitaSodo, situated 329 km southwest of the capital Addis Ababa, and 167 km south of the regional capital city Hawassa. According to the chief executive officers (CEOs) report, WSUTRH has a total of 268 bedsand Sodo Christian has 200 beds. Sodo Christian hospital is private hospitaland WSUTRH is the only public teaching and referral hospital in Wolaita zone which provides a broad range of medical services to both inpatients, and outpatients of all age groups in its catchment area for about two million people.

2.2. Population and Eligibility Criteria

The source of the population consisted of reproductive age women seeking post abortion care service at WSUTRH and Sodo Christian Hospital from February-July 2020. The study sample was all selected women who seek post-abortion care at both hospitals. All patients and records of patients in post-abortion care clinics were included. Patients who were critically ill, mentally disabled and unable to communicate were excluded from the study.

2.3. Sample Size Determination and Sampling Technique

To determine sample size a single population proportion formula using Epi Info version 7.2.0.1 was used with the following assumptions: 31% [14]. (Abate et al., 2020), a margin of error 5%, and 95% confidence interval. After adding a non-response rate of 10% the final sample size was 362. From all health facilities that provide post-abortion care in WolaitaSodo, WSUTRH and Sodo Christian hospitals were selected. The samples were proportionally allocated to size. Systematic random sampling method was used to select study participants.

2.4. Source of Data and Data Collection Methods

Data was collected using a structured interviewer-administered questioner, adapted with some modification from previous related studies [15, 17]. Data were collected via face-to-face interviews and card reviews. The final questionnaire had four subparts; socio-demographic characteristics, reproductive characteristics, self-reported reason of abortion, and knowledge and practice related to abortion. Item questions were checked for reliability and internal consistency using Cronbach's alpha coefficients. The tool was translated into the local language and subsequently translated back to English by different language experts to check for internal consistency. Data was facilitated by four BSc nurses and a supervisor (principal investigator).

2.5. Measurement Variables

Outcome variable: The outcome variable for this study was induced abortion. Induced abortion is the medical or surgical termination of pregnancy before the time of fetal viability.

Independent variables

Knowledge about complications of abortion: Assessed using 4 point knowledge score. Respondents were asked multiple response questions about the complications related to abortion. Those who mentioned greater than or equal to 4 complications of abortion were categorized as having "good knowledge" and those mentioned less than 4 were categorized as having "poor knowledge".

Knowledge about the fertility window period: Respondents were asked about the accurate pregnancy window period. Those who answered correctly were categorized as having 'good knowledge' otherwise 'poor knowledge'.

Knowledge about contraception types: Respondents were asked to mention different types of contraception methods, those who mentioned more than four were categorized as having 'good knowledge' otherwise 'poor knowledge'.

2.6. Data Quality Control

The tool was pre-tested on 5% of the sample size in nearby Dubo St. marry Hospital. All required revisions were made to the study tool based on the pre-test. Experienced enumerators i.e. four BSc nurses were recruited for the data collection. Before the actual data collection two -day intensive training about the aim of the study and sampling procedures was provided to enumerators. Selected participants were oriented about the study and their random selection; data from participants were received in private settings after deep discussion that removed their doubts and cleared their confusion. The supervisor (PI) had routine checkups for their completeness and scientific soundness. Before commencing data analysis, appropriate transformations were made on the variables.

2.7. Data Processing and Analysis

The data were entered into Epi-data version 3.1.1 then transferred to SPSS version 23 for analysis. Descriptive

statistics were conducted. Both bivariable and multivariable logistic regression analysis was carried out. Factors that were significant in bivariable with a p-value of<0.5 were retained for further consideration with multivariable logistic regression to control confounders. Odds ratios and 95% confidence intervals were computed and a p-value of less than 0.05 was used to determine the cut-off points for statistical significance. The necessary assumption of model fitness during logistic regression was checked using Hosmer -Lemeshow goodness- of- fit test statistics. Multicollinearity was checked by a variable inflation factor and all showed no multicollinearity with a variable inflation factor of less than five.

2.8. Ethical Approval

Ethical clearance was obtained from the academic research directorate of Wolaita Soddo University, College of Health Science and Medicine, and the official letter of cooperation was written to the respective health facility heads. Permission letters were obtained from the respective health facility heads. Written informed consent was obtained from all the study subjects before interviewing. No personal details were recorded or produced on any documentation related to the study and punctuality was assured. No one was obliged to participate unless otherwise agreed to take part.

3. Results

From a total of 362 sampled women in post-abortion care clinics of WolaitaSodo University Teaching and Referral Hospital andSodo Christian Hospital, 332 has participated in this study with a response rate of 91.7%.

Socio-demographic characteristics of participants

Large proportion of participants 142 (42.8%) fell within the age group of 20-24. The mean age ± SD of participants was 24.6±4.6. Majority of participants have attended at least primary education 279 (84%), unemployed 249 (75%), orthodox in religion 228 (68.7%), and married (74.4%). More than half of participants were living in urban area 177 (53.3%). Large proportion of participants 158 (47.6%) had monthly income of≤1000 ETB [Table 1].

Table 1. Socio-demographic characteristics of study participants in health facilities of WolaitaSodo, Southern Ethiopia 2018.

Variables	Category	Spontaneous Frequency	Induced Frequency	Total Frequency (percent)
Age in years	≤19	58	15	73 (22.0%)
	20-24	113	29	142 (42.8%)
	25-29	62	17	79 (23.8%)
	≥30	30	8	38 (11.4%)
Educational status	No formal education	52	1	53 (16.0%)
	Primary education	127	36	163 (49.1%)
	Secondary and above	84	32	116 (34.9%)
Occupational status	Employed	41	42	83 (25.0%)
	Unemployed	222	27	249 (75.0%)
Religion	Orthodox	183	45	228 (68.7%)
	Muslim	10	2	12 (3.6%)
	Protestant	80	12	92 (27.7%)
Marital status	Single	40	45	85 (25.6%)
	Married	223	24	247 (74.4%)
Residence	Urban	136	41	177 (53.3%)
	Rural	127	28	155 (46.7%)
Monthly income	≤1000	125	33	158 (47.6%)
	1001-2000	98	26	124 (37.3%)
	2001-3000	21	6	27 (8.2%)
	>3000	19	4	23 (6.9%)

Reproductive history of participants

Regarding reproductive history, a total of 200 (60.2%) of participants had four and above pregnancy in their life time and 107 (32.2%) had a family size of greater than or equal to seven. Majority of participants claimed that they had no previous history of abortion, had no previous history of induced abortion, and their last pregnancy was wanted 288 (86.7%) and 312 (94.0%), 175 (52.7%), respectively. Near to half, 175 (52.7%) of participants ever used short-acting contraceptive method [Table 2].

Table 2. Reproductive of study participants in health facilities of Wolaita Sodo, Southern Ethiopia 2020.

Variable	Category	Spontaneous	Induced	Total (%)
Parity	1-3	121	11	132 (39.8%)
	≥4	142	58	200 (60.2%)
Family size	1-3	9	96	105 (31.6%)
	4-6	13	107	120 (36.1%)
	≥7	47	60	107 (32.2%)
Previous history of abortion	Yes	29	15	44 (13.3%)
	No	234	54	288 (86.7%)
Ever had induced abortion	Yes	16	4	20 (6.0%)

Variable	Category	Spontaneous	Induced	Total (%)
	No	247	65	312 (94.0%)
Gestational age of current pregnancy	≤ 12 weeks	7	6	13 (3.9%)
	>12 weeks	256	63	319 (96.1%)
	No	44	40	84 (25.3%)
Contraceptive use	Long-acting	61	12	73 (22%)
	Short-acting	158	17	175 (52.7%)
Current pregnancy intension	Wanted	231	49	280 (84.3%)
	Unwanted	31	20	51 (33.7%)

*Level of awareness and practice of participants related to abortion*

The majority, 229 (69.0%) and 220 (66.3%) of participants had good knowledge about types of contraception and pregnancy signs and symptoms, whereas, 228 (68.7%) of participants had poor knowledge about the exact fertility window period. More than half of participants 175 (52.7%), 180 (54.2%) had poor knowledge about abortion-related complications and safe time to undergo induced abortion, respectively. About 8.4% of participants develop abortion related complications, of them almost all 27 (96.4%) was those who had induced abortions. Majority of women undergone induced abortion claimed that abortion was performed in health facilities 40 (58.0%) proceeded by own house 20 (30.0%). About 38 (55.1%) and 36 (522%) of women undergone induced abortion revealed that gestational age of current pregnancy during abortion was ≥ 12 weeks and surgical management was a method to terminate pregnancy, respectively [Table 3].

Table 3. *Knowledge and practice related factors of study participants in health facilities of WolaitaSodo, Southern Ethiopia 2020.*

Variables	Category	Spontaneous abortion	Induced abortion	Total
Awareness about complication of abortion	Poor awareness	136	39	175 (52.7%)
	Good awareness	127	30	157 (47.3%)
Awareness about contraception types	Poor awareness	85	18	103 (31.0%)
	Good awareness	178	51	229 (69.0%)
Awareness about fertility window period	Poor awareness	176	52	228 (68.7%)
	Good awareness	87	17	104 (31.3%)
Knowledge about pregnancy sign and symptom	Poor awareness	88	24	112 (33.7%)
	Good awareness	175	45	220 (66.3%)
Safe time for induced abortion	Good awareness	121	31	152 (45.8%)
	Poor awareness	142	38	180 (54.2%)
Post-abortion complication	Yes	1	27	28 (8.4%)
	No	262	42	304 (91.6%)

Self-reported reasons to have induced abortion
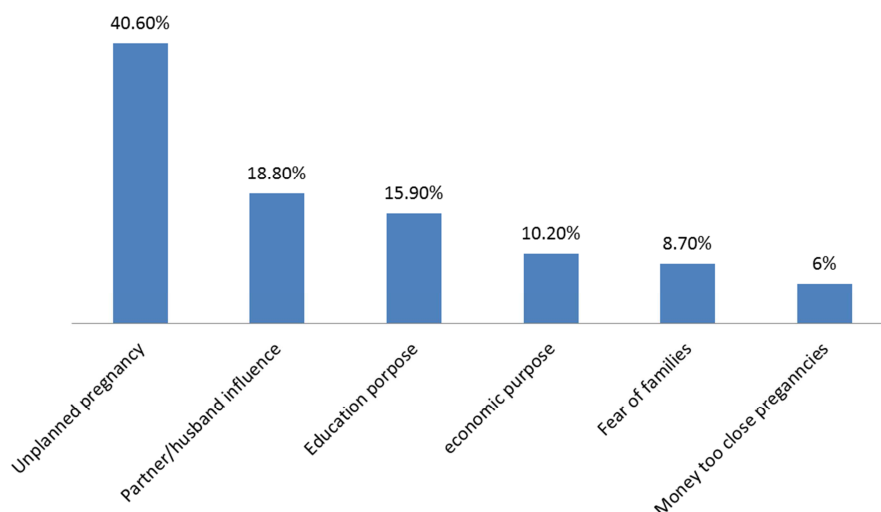
Figure 1. *Respondents self-reported reasons for induced abortion in health facilities of WolaitaSodo, 2020.*

Self-reported reason of induced abortion

Concerning self-reported reasons, large proportion of participants (40.6%) mentioned that unplanned pregnancy as the main reason to commit induced abortionproceeded by partner/husband influence (18.8%). About 15.9% and 10.2% of participants reported that education and economic purpose were their main reason to seek induced abortion, respectively [Figure 1].

Factors associated with induced abortion

During bivariable logistic regression marital status, educational status, gestational age of current pregnancy, parity, family size, previous history of abortion, and pregnancy intension were significantly associated with induced abortion. Results of multivariable logistic regression indicated that marital status, educational status, current order of pregnancy $\geq$ four, and pregnancy intension remained significantly associated with committing induced abortion.

Single women were 5.8 times more likely to undergo induced abortion than married women {AOR: 5.8; 95% CI: (2.785, 11.898)}. Women who have never attended any formal education were 0.2 times less likely to have induced abortion than those who have attended secondary and above education {AOR: 0.20; 95% CI: (0.050, 0.795)}. Women whose current pregnancy were fourth and above in order were four times more likely to undergone induced abortion {AOR: 4.128; 95%CI: (1.597, 10.666)} than those whose current pregnancy were less than four in order. Moreover, women whose current pregnancy was unwanted were approximately four times more likely to seek induced abortion {AOR: 4.21; 95%CI:(1.432, 6.453)} compared to women who had wanted pregnancy [Table 4].

Table 4. *Factors associated with induced abortion in health facilities of WolaitaSodo 2020.*

Variables	Abortion		COR (95%CI)	AOR (95%CI)
	Induced	Spontaneous		
Marital status				
Married	24	223	1	1
Single	45	40	10.453 (5.743, 19.026)	5.756 (2.785, 11.898)*
Educational status				
No education	1	52	0.050 (0.007, 0.381)	0.200 (0.050, 0.795)**
Primary	36	127	0.744 (0.429, 1.290)	0.947 (0.498, 1.802)
Secondary and above	32	84	1	1
Gestational age				
$\leq$ 12 weeks	6	7	1	1
>12 weeks	63	256	0.223 (0.112, 0.443)*	0.976 (0.330, 2.882)
Family size				
1-3	96	9	0.120 (0.055, 0.262)	0.353 (0.096, 1.307)
4-6	107	13	0.155 (0.078, 0.309)	0.452 (0.197, 1.034)
7 and above	60	47	1	1
Previous abortion				
Yes	15	29	1	1
No	54	234	0.730 (0.347, 1.536)**	0.297 (0.117, 1.055)
Current pregnancy				
<fourth pregnancy	11	121	1	1
$\geq$fourth pregnancy	58	142	4.493 (1.799, 13.917)	4.128 (1.597, 10.666)**
Pregnancy intension				
Wanted	49	231	1	1
Unwanted	20	32	3.04 (1.622, 5.587)***	4.210 (1.432, 6.453)**

4. Discussion

This study attempted to assess the factors associated with induced abortion among clients who came to post abortion care clinics of WSUTRHand Sodo Christian hospital.

In the study, 20.8% of participants who seek post-abortion care services had an induced abortion. This finding is lower than the report from studies conducted in Felegehiwot (31%) [14], Shire Tigray (81.2%) [18]. and Bahirdar (40.7%) [19]. However, the finding of the current study is higher than previous studies conducted in Ethiopia [16-20]. This difference might be related to the difference in the provision of the family planning services through time. Regardless of the presence of restrictive laws, the opening of various private health institutions might contribute to the rise in the number of induced abortions. Furthermore, it might be related to the difference in the study settings. In various areas, communities' perception towards fertility is related to local cultures and religious views.

In the current study, being single had a significant positive association with increment of induced abortion. This is supported by research findings from the previous studies conducted in Ethiopia [15, 21-23], and Ghana [24] which stated that abortion seekers were more likely to be unmarried. In patriarchal societies like Ethiopia, pregnancy outside wedlock is considered as a taboo. Thus, unmarried women may face various challenges including discrimination if they get pregnant. Therefore, single women prefer to terminate the pregnancy to avoid such experiences. However, women's decision to have an abortion is influenced by the perception of the society.

In the current study, women who have never attended any formal education were less likely to have an induced abortion. This finding is supported bythe studies conducted in different contexts that stated illiterates were less likely to have an induced abortion [23-25]. This might be due to the fact that women with formal educationmay not want to disrupttheir education. Because they perceive that their future employment/way to earn money for living depends on their current education.

Moreover, increased parity is associated with the incidence

of induced abortion. Women whose pregnancy were fourth and above in order were more likely to experience an induced abortion as compared to women whose pregnancy were less than four in order. The finding is consistent with studies from Guraghe, Ethiopia [16] and Asturias, Spain [26]. This is due to the fact that since women with history of many pregnancies might not want to have additional children, thus they undergo induced abortion as an option to limit their family size.

Furthermore, the odds of having induced abortion were four times more likely to increase in women having unplanned pregnancy than those who have planned pregnancy. The finding from this study is supported by the previous studies conducted in Gondar and Guraghe [1, 5, 16]. This might be explained as women use induced abortion as an option to avoid unwanted pregnancy.

5. Conclusion and Recommendation

About 20.8% of women who seek post-abortion care service in the current study undergone induced abortion. Being single, illiterate, having unwanted pregnancy and having four or more history of pregnancy were positively associated with induced abortion. So to decrease morbidity and mortality related to induce abortion is better to tackle this factor

Therefore, it is recommended a need that to increasing access to contraception and provide a strict family planning counseling especially for women with secondary education and above, single, and those who have history of 4 and more pregnancies. The development and prompt implementation of a strategy that enables women to safely manage unwanted pregnancy is recommended.

6. Limitation of the Study

Due to the cross-sectional nature of the study, it was difficult to establish a temporal relationship between the determinants and outcome variables. Though training was given to the data collectors to inform respondents about the purpose of the study, the study might still be liable to social desirability bias.

References

[1]   Cunningham F, Leveno K, Bloom S, Spong CY, Dashe J. Williams Obstetrics. 24th ed. New York: McGraw-Hill Education; 2014. p. 370–83.

[2]   WHO, Safe and Unsafe Induced Abortion Global and Regional Levels in 2008, and Trends During 1995–2008, World Health Organization, Geneva, Switzerland.

[3]   Sedgh G, Bearak J, Singh S, Bankole A, Popinchalk A, Ganatra B, et al. Abortion incidence between 1990 and 2014: global, regional, and subregional levels and trends. Lancet. 2016; 388 (10041): 258–67.

[4]   Family planning: a key component of post abortion care

[5]   Consensus Statement: International Federation of Gynecology and Obstetrics (FIGO), International Confederation of Midwives (ICM), International Council of Nurses (ICN), and (USAID), 2009.

[5]   Moore, A. M., et al., The estimated incidence of induced abortion in Ethiopia, 2014: Changes in the provision of services since 2008. International perspectives on sexual and reproductive health, 2016. 42 (3): p. 111.

[6]   Allan Guttmacher Institute Facts on Abortion in Africa. [Accessed June 18, 2014]. Available from: http://www.guttmacher.org/pubs/IB_AWW-Africa.pdf.

[7]   World Health Organization. Unsafe Abortion: Global and Regional Estimates of the Incidence and Mortality in 2008. 6th ed. Geneva, Switzerland: Department of Reproductive Health and Research, World Health Organization; 2011. [Accessed June 18, 2014]. Available from: http://www.who.int/reproductivehealth/publications/unsafe _abortion. [Google Scholar].

[8]   Moore AM, Gebrehiwot Y, Fetters T, Wado YD, Bankole A, Singh S, et al. The estimated incidence of induced abortion in Ethiopia, 2014: changes in the provision of services since 2008. IntPerspect Sex Reprod Health. 2016; 42 (3): 111.

[9]   Gebreselassie H, Fetters T, Singh S, Abdella A, Gebrehiwot Y, Tesfaye S, et al. Caring for women with abortion complications in Ethiopia: national estimates and future implications. IntPerspect Sex Reprod Health. 2010; 36 (1): 6–15.

[10] Gebrehiwot Y, Tippawan L: Trends of abortion complications in a transition of abortion law revisions in Ethiopia [Abstract]. Journal of Public Health (oxf). 2008, 1-7. 10.1093/pubmed/fdn068.

[11] Gelaye, A. A., Taye, K. N. and Mekonen, T. (2014) 'Magnitude and risk factors of abortion among regular female students in Wolaita Sodo University, Ethiopia', BMC Women's Health, 14 (1), p. 50. doi: 10.1186/1472-6874-14-50.

[12] Vlassoff M, Fetters T, Kumbi S, Singh S. The health system cost of postabortioncare in Ethiopia. Int J Gynaecol Obstet. 2012; 118 (Suppl 2): S127–33.

[13] Abdella, A., et al., Meeting the need for safe abortion care in Ethiopia: results of a national assessment in 2008. Global public health, 2013. 8 (4): p. 417-434.

[14] Abate E, Smith YR, Kindie W, Girma A, Girma Y. Prevalence and determinants of post--abortion family planning utilization in a tertiary Hospital of Northwest Ethiopia: a cross sectional study. Contraception and Reproductive Medicine. 2020 Dec; 5 (1): 1-6.

[15] Oumer M, Manaye A. Prevalence and associated factors of induced abortion among women of reproductive age group in Gondar Town, Northwest Ethiopia. Int J Public Health. 2019 May 27; 7 (3): 66.

[16] Tesfaye G, Hambisa MT, Semahegn A. Induced abortion and associated factors in health facilities of Guraghe zone, southern Ethiopia. Journal of pregnancy. 2014 Jan 1; 2014.

[17] Bonnen KI, Tuijje DN, Rasch V. Determinants of first and second trimester induced abortion-results from a cross-sectional study taken place 7 years after abortion law revisions in Ethiopia. BMC pregnancy and childbirth. 2014 Dec; 14 (1): 1-9.

[18] Moges Y, Hailu T, Dimtsu B, Yohannes Z, Kelkay B. Factors associated with uptake of post-abortion family planning in Shire town, Tigray, Ethiopia. BMC research notes. 2018 Dec; 11 (1): 1-6.

[19] Muchie A, Getahun FA, Bekele YA, Samual T, Shibabaw T. Magnitudes of post-abortion family planning utilization and associated factors among women who seek abortion service in Bahir Dar Town health facilities, Northwest Ethiopia, facility-based cross-sectional study. Plos one. 2021 Jan 20; 16 (1): e0244808.

[20] Melkamu Y, Betre M, Tesfaye S. Utilization of post-abortion care services in three regional states of Ethiopia. Ethiopian Journal of Health Development. 2010; 24 (1).

[21] Bonnen KI, Tuijje DN, Rasch V. Determinants of first and second trimesterinduced abortion - results from a cross-sectional study taken place 7 years afterabortion law revisions in Ethiopia. BMC Pregnancy Childbirth. 2014; 14 (1): 416.

[22] Tilahun F, Dadi AF, Shiferaw G. Determinants of abortion among clientscoming for abortion service at felegehiwot referral hospital, NorthwestEthiopia: a case control study. ContraceptReprod Med. 2017; 2 (1): 11.

[23] Megersa BS, Ojengbede OA, Deckert A, Fawole OI. Factors associated with induced abortion among women of reproductive age attending selected health facilities in Addis Ababa, Ethiopia: a case control study. BMC Women's Health. 2020 Dec; 20 (1): 1-1.

[24] Klutsey EE, Ankomah A. Factors associated with induced abortion at selected hospitals in the Volta Region, Ghana. International journal of women's health. 2014; 6: 809.

[25] Alemayehu B, Addissie A, Ayele W, Tiroro S, Woldeyohannes DJR. Magnitude and associated factors of repeat induced abortion among reproductive age group women who seeks abortion Care Services at Marie Stopes International Ethiopia Clinics in Addis Ababa. Ethiopia. 2019; 16 (1): 76.

[26] D. O. Tsakiridu, A. F. Vidal, F. V. Vald´es et al., "Factorsassociated with induced abortion in women prostitutes inAsturias (Spain)," PLoS ONE, vol. 3, no. 6, Article ID e2358, 2008.