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Ethiopian Society of Obstetricians and Gynecologists (ESOG)

Tel.: +251 115 506 068/069 Fax: +251 115 506 070

P.O. Box: 8731

Addis Ababa, Ethiopia

esogeth@gmail.com

newsletter@esog.org.et

www.esog-eth.org

Address:

Head Office:

Ras Desta Damtew Avenue
Tsehafi Tizaz Teferawork Keda Building (Near Ghion Hotel)
East Wing, 2nd Floor, Room no 7

ESOG Project Office:

Kirkos District/ Kassanchis

Nigist Towers, Building, 3rd floor

ASSESSING MEDICO LEGAL EVIDENCE AND LEGAL OUTCOME AMONG CASES OF SEXUAL ASSAULT (RAPE) IN ADDIS ABABA

Birhanu Kebede, MD, MPH
Department of Obstetrics and Gynecology, Yekatit 12 Hospital Medical College

ABSTRACT

BACKGROUND: Sexual violence against women is a significant public health issue globally. The importance of medical evidence for decisions made by legal bodies is immense and is documented in high-resource countries. It is not clear what interventions work best in low resource countries like Ethiopia.

OBJECTIVES: To describe the medico legal findings of sexual assault cases and its association with legal outcome among victims of sexual violence cases in Addis Ababa.

METHODS: This study conducted a retrospective cross sectional descriptive study in the ten sub cities of Addis Ababa assessing a one-year record of sexual assault that were reported between January 1,2012 and 31 December, 2012. Samples of 224 sexual assault cases were drawn from 10 police stations in the sub cities. Data were collected from standardized police charts and court records. The OR and 95% CI estimates were also used to compare outcome predictors. Logistic regression was done to determine the association between medico legal finding and predictors of outcome with conviction.

RESULTS: The charge filing and conviction rates of the police-reported cases were 76.8% and 58.9%, respectively. The odds for conviction was more than six times more likely in unknown perpetrator and more than eight times more likely in cases where there was positive evidence of spermatozoa.

CONCLUSIONS: There was high charge filing and conviction rate. Sexual assaults by unknown assailant and visualization of sperm by direct microscopy were associated with conviction.

RECOMMENDATIONS: Qualitative study to survey police, prosecutors, physicians and judges regarding the usefulness of medical-legal evidence is recommended.

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INTRODUCTION

Sexual offense is violence against women and significant public health issue in both the developed and developing world[1]. Sexual assault is any sexual act performed by one person on another without the persons consent and it includes genital, oral or anal penetration by a part of the accused body or by an object. It may result from force, the threat of force either on the victim or another person, or the victim's inability to give appropriate consent[1, 2]. Rape is a psychologically devastating crime. The physical and emotional healing process is lengthy, complex, and, unfortunately, incomplete in many cases. Although no single event will complete the recovery process, the arrest and successful prosecution of the victim's assailant can be an important step[3]. The World Health Organization (WHO) recognizes that rape may be committed by a spouse, partner, or acquaintance as well as a stranger that men can be victims as well as perpetrators, and that coercion need not be physical[2].

The World Health Organization estimates that between 1% and 12% of women aged 15 or over have experienced sexual violence by a non-partner[2, 4]. In Ethiopia School based study in Addis Ababa and western Shoa zone showed the prevalence of completed rape and attempted rape among female students of 5% and10 % [(5)]. There have been great efforts for improvement on sexual assault care in this country which includes development of clinical management guidelines[6].

Though expert medical evidence is widely used in rape cases, its contribution to the progression of cases through the legal system and to legal case outcomes is unclear[2]. Multiple studies have been published about risk stratification, injury pattern, psychological impact, and assailant profiles in cases of sexual assault[7, 8], yet very few studies address the factors associated with successful legal prosecution of these cases [9-12]. Thus, this study was conducted with the aim of describing the contribution of medical evidence to the legal outcome.

SUBJECTS AND METHOD

The study used a retrospective cross sectional descriptive study to determine the association between medico legal evidences and legal outcome. All sexual assault cases reported to the police from January 1 2012 to 31 December 2012 in the ten sub cities were analyzed. Addis Ababa the capital of Ethiopia has a total of 10 sub cities serving reported sexual assault cases. All sexual assault cases whose cases were closed, the suspects (assailant) were identified and that contain a record of a medical examination of the victim were included in the study.

Sample size was calculated using Epi Info (stat calc) for cross sectional studies Using 95% CI and assuming 5% degree of error and Power of 80% considering P1=Conviction rate of 25% among those with medico legal evidence (adult cases) - south African study (14) and P2=Conviction rate of 10 %

among those without medico legal evidence (adult cases) - south African study (14) assuming Risk ratio of 2.5 and Odds ratio of 3 to get Sample size 224.

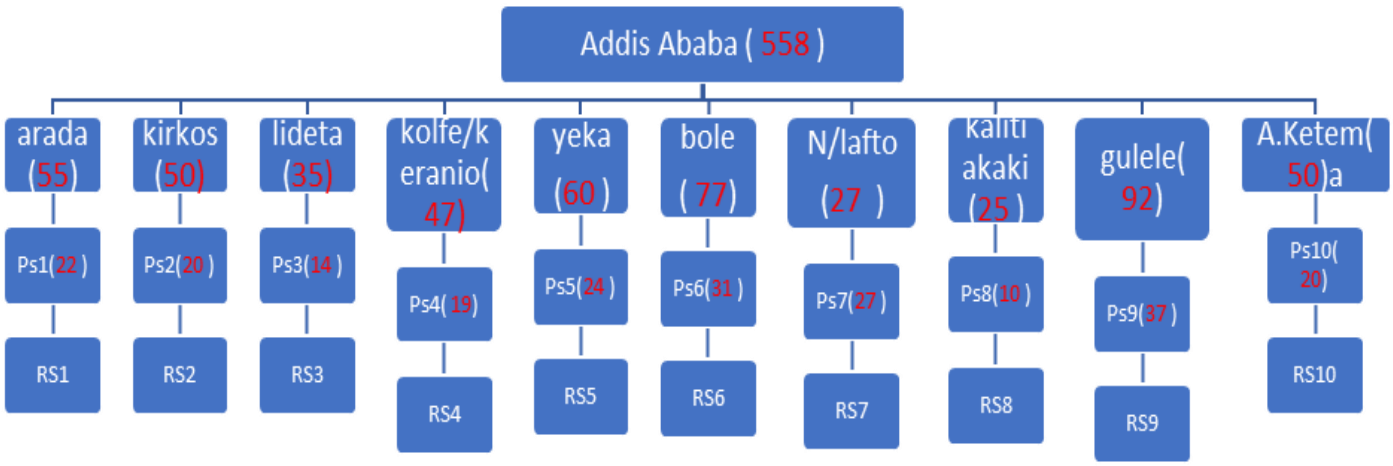

Fig 1. Addis Ababa ten sub cities

A sample of 224 sexual assault cases were drawn from each sub cities using sampling with probability proportional. This is to size based on the number of sexual assault cases seen in the respective sub cities during the study period. Individual cases were selected from the determined sample size with random number generator (Fig. 1).

Data sources include standardized police charts used by police surgeons to examine women reporting sexual assault and court records. A standardized, structured pre-tested data extraction format which includes all the necessary variables in accordance with the objective of the study was prepared. The data extraction format has variables on the details of the complainant/victim (age, emotional state and previous consensual sexual relation), the circumstances of the sexual assault (when it occurred, use of weapons) and information on the suspect (age and relationship to victim), medico legal evidence and on the case outcome.

Documented findings of the medical examination, and any other reports were retrieved from the police dockets. Data was abstracted by ten trained data collectors (nurses/general practitioners).

Concerning operational definitions of incised wounds, lacerations, grazes, bruises on the whole body except the ano-genital regions were used to define non genital injuries. Those found on the Mons pubis, frenulum, clitoris, labia majora, labia minora, perineum, fossa navicularis, hymen, vagina, clitoris, or anus were labelled as ano-genital

SCORE	CRITERIA
1=no injury	no documented signs or symptoms
2=Mild	Redness or tenderness only or minor injuries with no expected effect on physical function
3=Moderate	Injuries or injury expected to have some effect on function and/or more than redness-tenderness of the genitalia. Injury to the genitals with a skin break only – include genital injury that took the form of an incised wound, scratch, abrasion or laceration including anal rectal injuries.
4=Severe	Genital injury with active bleeding or scarring. Injuries requiring treatment (lacerations requiring suturing and wounds requiring dressings) and/or bruising of the head and neck expected to result in significant headache. Head injury with concussion and/or evidence of attempted strangulation and/or other major injuries (e.g. limb fracture, internal organ contusion)

injuries. The injuries recorded ranged from lacerations to bruising and redness or inflammation. Degree of injury was scored using clinical injury score criteria. Conviction and acquittal were used where the defendant has been found guilty and not guilty respectively.

Data was entered in to Epi Info version7 and exported to SPSS version 15.0 statistical software package for data cleaning and analysis. Frequency output and sorting was used to check missing values and outliers. The explanatory variables; victim suspect relationship, evidence of trauma and injury extent score were recorded further for analysis. Victim suspect relationship was dichotomized and recoded in to known and unknown assailant. Evidence of trauma was also dichotomized and recoded in to no evidence and positive evidence of trauma. Injury extent score 1 and 2 summed to mild injury and injury extent score 3 and 4
summed to severe injury for further analysis.

Data were analyzed using SPSS version 15. The P-value of 0.05 was taken as level of significance in comparison between outcome and explanatory variables. Descriptive statistics and summary measures were employed to describe key study findings. The OR and 95% CI estimates was used to compare important outcome predictors. The association of medical-legal variables and assault characteristics with filing of charges (among the subset of cases in which a suspect was identified by police) and conviction (among the subset of cases in which charge were filed) was examined by using logistic regression. Data was presented with tables and graphs.

Two days intensive training was given for the data collectors. Consistency of filled data was checked by one supervisor at each sub city every other day.

Five percent of the filled data was checked for accuracy by the supervisors. The principal investigator attended random record review sessions to monitor the data collection. Data was profiled to discover inconsistencies and other anomalies in the data and data cleansing (missing data interpolation) was performed.

Ethical clearance for the research was obtained from the Addis Continental Institute of Public Health (ACIPH) Institutional Review Board (IRB). Permission to review closed rape cases was obtained from the administrative bodies of sub cities (police) regionally, and at the stations. Permission to review court documents was obtained from the federal first instance court regionally. All data collected from police and medico legal records of victims were linked anonymously with legal outcomes using the codes provided for each record of victims. No personal identifier was recorded in the individual data sheet to keep anonymity of cases. Information collected from the study was stored in a file.

RESULTS

A total of 558 sexual assault cases were reported to the 10 sub city police administrations from January 1 2012 till 31 December 2012. A total of 224 closed sexual assault cases (40%) that met the study's inclusion criteria were selected from the ten sub city police administrations.

The mean age of victims was 16.3yrs (SD 8.9yrs) with age less than 19 comprising the majority (72.3%) of cases. Two hundred fourteen (95.5%) of all cases involved female victims. Previous consensual sexual intercourse was reported in 65 (29.7%) of

Table 1: Characteristics of patients, assailants and assaults among cases of Sexual assault occurring in Addis Ababa; January 1 2012 till 31 December 2012

Characteristic	No of cases (n=224)	% of cases
Sex		
Male	10	4.5
Female	214	95.5
Age		
<10	75	33.5
10-19	87	38.8
20-29	43	19.2
30-39	15	6.7
40-49	3	1.3
>50	1	0.4
Circumstance of assault		
Assailant known to victim	195	87
Assailant not known by the victim	29	12.9
Weapon used	39	17.4
Forced vaginal penetration	143	63.8
Motile sperm seen	22	9.8
Presence of STI	14	6.3
Presence of pregnancy	5	2.2
Rape reported within 72 hours	94	42
More than one assailant	11	4.9
Self-reported penetration	143	63.8
Evidence of trauma		
No evidence	113	50.4
Ano genital	68	30.4
Physical	5	2.2
Both ano genital and physical	38	17
1(no injury)	114	50.8
2(mild injury)	32	14.3
3(moderate injury)	42	18.8
4(severe injury)	36	16.1

cases. The mean age of assailants was 28.7yrs (SD 8.5yrs). In 195 (87.1%) of cases the assailant was known to the victim before the as

sault and 11 (4.9%) involved multiple assailants. More than half (63.8%) of victims reported vaginal, anal and/or foreign object penetration. One hundred thirty (58 %) of the cases reported to the police within 72 hours. Blunt object was the commonest weapon use reported in 21/224 (9.4%) of total cases and in 21/39(53.8) of cases where weapon was used. The main characteristics of the study population are presented in Table 1.

Medico legal evidence in the form of pictorial presentation of physical and ano-genital evidence (trauma gram) was available in 47 (21%) of cases. There was no evidence of trauma in nearly half 113 (50.4%) of cases. There was positive evidence of trauma in 111 (49.6%) of total cases (Table 1). Among those where there was evidence of trauma the commonest evidence stated was ano-genital injury which was noted in 68 (30.4%) of total cases

Table 2. Site and type of ano genital injury among cases of sexual assault (rape) Addis Ababa; 2012

Site	Number	Type	No.
Hymen	40	Areas of tenderness	5
Labia majora/minora	27	Redness/inflammation	6
Perineum	17	Bruise	25
vagina	9	Laceration	71
Anus	12		
Other	1		
			10
Total	106		
			7

Table 3. Site and type of physical injury among cases of sexual assault Addis Ababa; 2012(n=111)

Physical (non-genital) injury			
Site	Number	Type	Number
Upper extremity	6	Tenderness	1
Lower extremity	20	redness/inflammation	1
Trunk and abdomen including breast	12	bruise/graze	23
Head and neck	5	laceration	14
		incised wound	3
		other	2
Total	43		44

and in 68/111 (61.3%) of cases where there was evidence of trauma. Non-genital physical evidence alone was noted in 5 (2.2%) of total cases and in 5/111 (4.5%) of cases where there was evidence of trauma and both physical and genital injury was noted in 38 (17%) of total cases and in38/111 (34.2%) of cases where there was evidence of trauma. The most common documented genital injury was lacerations seen in 71 (66.4%) of cases, followed by bruising documented in 25 (23.4%) of cases. Hymen was reported to be the most common site of documented genital injury documented in 40 (37.7%) of cases. The lower extremity was the most common site of documented extra genital injury documented in 20 (46.5%) of cases. The most common documented extra genital injury was bruising seen in 23 (52.3%) of cases. The genital and physical findings of the study population are presented in Table 2.

Twenty-two (9.9%) of samples tested positive for the presence of sperm-semen. There was no reported DNA testing in the cases examined. Pregnancy as a result of the assault occurred in 5 (2.3%) cases. Sexual transmitted infection (STI) related to the assault was reported in 14 (6.3%) cases. The degree of injury was scored using the scoring criteria set and the degree of injury was rated as mild in 32 cases (14.3%), moderate in 42 cases (18.8%) and severe in 36 cases (16.1%) see Table 1.

Regarding the attrition of cases in the legal system, in 172 (76.8%) cases charges were laid, and in 132 of these the outcome was a conviction. For a conviction rate of 132 (58.9%) overall and 132 (76.7%) for cases in which charges were laid. No charges were laid in 52 (23.2%) of total cases.

Concerning the association of medico legal evidence with legal outcome, the **c**harges were laid in 62 (54.9%) of the 113 cases with no injury. In all of the 32 (100%) cases with mild injury, in all of the 42 (100%) cases with moderate injury and all of the 36 (100%) cases with severe injury. Of the 172 cases where charges were laid, the suspect was convicted in 27 (43.5%) of the 62 cases with no injury, in 28 (87.5%) of the 32 cases with mild injury, in all of the 42 (100%) cases with moderate injury and in 35 (97.2%) of the 36 cases with severe injury. Up on bivariate analysis the following victim and assault characteristics (unknown assailant, weapon use, reporting of rape within 72 hours, positive evidence of trauma, severe injury extent score and visualization of sperm by direct microscopy) were associated with conviction at a *P* value of less than 0.05 (Table 4).

The variables associated with the case outcome at a *P* value of less than 0.05 were entered into the logistic regression model. After adjusting the variables for possible confounding with multiple logistic regression analysis the only variables found to be associated with conviction were unknown assailant, reporting within 72 hours and visualiza-

Table 4: Logistic regression model for factors significantly associated with conviction in sexual assault cases for which there was an identifiable Suspect, Addis Ababa;2012 (n=224).

Factor(variable)	Conviction		Unadjusted regression(COR)		Adjusted Regression(AOR)	
	No	Yes	Odds ratio	95% CI	Odds ratio	95% CI
Relation with the victim						
Known assailant	91(46.7%)	104	1.00		1.00	
Unknown assailant	(53.3%)					
			24	3.27-183.65	6.57*	1.25-34.57
	1(3.9%)	128				
	(96.6%)					
Weapon use						
No	90(48.6%)	95	1.00		1.00	
Yes	(51.4%)		17.53	4.10-74.85	3.47	0.65-18.43
	2(5%)	37				
	(94.9%)					
Time of reporting rape						
>72 hours	88(67.7%)	42	1.00		1.00	
<72 hours	(32.3%)		47.14	16.22-137.00	0.06	0.03-0.28
	4(4.3%)	90				
	(95.7%)					
Evidence of trauma						
No evidence	87(77%)	26	1.00		1.00	
Positive evidence	(23%).5		70.94	26.14-192.49	0.05	0.01-0.17
	5(4.5%)	106				
	(95%)					
Injury score						
Mild injury	91(62.3%)	55	1.00		1.00	
	(37.7%)		127.4	17.22-42.17	0.41	0.06-2.73
Severe injury	1(1.3%)	77				
	(98.7%)					
Detection of sperm						
No	91(45%)	111	1.00		1.00	
	(55.1)		17.22	2.27-130.45	8.7*	2.19-34.58
Yes	1(4.5%)	21				
	(95.5%)					

*- significant association

tion of sperm by direct microscopy (Table4). The odds for conviction was more than six times more likely in unknown perpetrator and more than eight times more likely in cases where there was positive evidence of spermatozoa.

DISCUSSION

This study was undertaken to determine whether injury documented by a physician and circumstances of the assault is associated with legal outcome in cases of sexual assault. There was high charge filing and conviction rate. Sexual assaults by unknown assailant and visualization of sperm by direct microscopy were associated with conviction.

Very few studies address the factors associated with successful legal prosecution of risk stratification, injury pattern, psychological impact, and assailant profiles in cases of sexual assault. A recent review found 35 studies exploring the association, all but two from high-income countries, with only two studies from the United States and one from Canada and one from South Africa finding an association. Many of the studies were very small and out dated, which influenced the analyses performed and power thereof [7-14]. A minority (some report <10%) of women report sexual assault of those that negotiate the police process, only a minority will come to a court hearing[8, 15-17]. It is thought that the courts still rely upon medical evidence, in particular evidence of genital injury to 'prove' the rape[18-20]. This is one of the first studies that used a more refined measure of injury extent on the basis of a detailed review of police and court records to link medical findings in Ethiopian sexual assault cases to legal outcomes.

Record of emotional state of the victim of 67.9% in this study is low when compared to studies done in South Africa where emotional state of the victim was recorded in of 89-92% of cases [14]. Weapon use in sexual assault cases ranges from 12% to 27%[10]. This is consistent with the findings in this study of 17.4%. Trauma gram of 21% in this study was very low compared with studies done in Canada and America with more than 90% of cases having trauma gram in the medical record[10, 11]. The proportion of cases with observed genital injury (30.4%) in this study was higher than reported in previous studies of 24% but lower than proportions reported in recent south African studies of 39-42%[14]. This might be explained by the fact that toludine blue and colposcopic examination was performed in the recent studies, thereby increasing the detection rate of observed genital injury. Nevertheless, our finding confirms previous research suggesting that visible genital trauma is relatively uncommon in sexual assault and observed genital injury is absent in more than 50% of cases of sexual assault[16].

The frequency of sperm-semen positivity (9.9%) in this study is low compared with other studies that report 13% to 17% incidence of spermatozoa with unstained microscope and 50% incidence with

Prostate-specific antigen staining methods[10-12]. The fact that microscopic evidence alone was used in this study might explain the decreased incidence of spermatozoa detection highlighting the low sensitivity of the tests used in this study. Other possible reasons that include time delays in presenting for examination, douching and bathing after an assault need further studies. No DNA test for matching was done in all cases in this study. There have been significant advancements made in the field of DNA matching. It is likely that these advancements will increase the significance of spermatozoa detection and result in an increased emphasis on its importance during prosecution[12].

The charge filing and conviction rates (76.8% and 58.9%, respectively) of the police-reported cases seen over the one-year study period is higher than findings from other studies in the United States and Scandinavian literature[10, 11]. The overall conviction rate, using total number of cases as the denominator, was high in this study (58.9%) than studies by Helweg-Larsen and Pentillä and Karhumen (20%) and cases series reported by Rambow and associates (19%) in 1985 [(12)]. This might be explained by the fact that only closed cases were reviewed in this study which might result in selection bias and also many of the earlier studies are based on data collected in the 1980s might suggest that two decades of legal reforms may affect prosecution and conviction.

At the crude level the odds for conviction in this study was high for unknown perpetrator. Perpetrators who used weapons and cases where the rape was reported within 72 hours. Reporting within 72 hours was associated with positive sperm/ semen detection in this study as 22% of cases in this study have positive sperm/semen detection when reported within 72 hours while no positive sperm/semen detection occurred when cases were reported after 72 hours[13]. Weapon use was associated with conviction in this study. Weapon use or use of force is important because it directs the examiner to look for specific injuries or potential areas of injury. This was evidenced in this study that there was positive evidence of trauma in 94.9% of cases when weapon was used as compared to 40% when weapon was not used, making the odds of positive evidence 27 times more likely when weapon was used than when weapon was not used (OR= 28.8, 95% CI 6.5-118.7).

In this study the odds of conviction were also high in cases where there was evidence of trauma, severe injury score and positive evidence of spermatozoa at crude analysis. Prior studies investigating an association between legal outcomes and trauma found on physical examination after a sexual assault have produced mixed results. Prior retrospective case series found that evidence of trauma after a sexual assault was associated with a successful legal outcome. However, different study found no relationship between trauma on physical examination and legal outcome[12].

Of the studies which showed positive association between medico legal evidence and legal outcome, two of the studies were hospital based while two of the studies from United States and South Africa. In contrast, were population-based study where there is no hospital selection bias and therefore, the results have great internal validity.

The study in South Africa showed an association between documentation of ano-genital injuries, trials commencing, and convictions in rape cases[14]. Its findings are of particular importance. This is because they show the value of good basic medical practices in documentation of injuries, rather than more expensive DNA evidence, in assisting courts in rape cases in developing countries. It is notable that in a quarter of child cases where there was a conviction there were no documented injuries, which was also the case in 10% of adult cases[14]. These data confirm that the presence of injury is not essential for a conviction in rape cases in South Africa.

The crude association between convictions with genital findings suggests the need to increase the time devoted to document micro trauma of the genital region by any available means. After dichotomizing the injury score in to mild and severe a gradient association was seen as cases move from mild to severe as was evident in that the odds for conviction was 127 times more likely in severe injury than mild injury (OR=127, 95% CI- 17-42).

After adjusting for possible confounding variables, the odd for conviction in this particular study was maintained only for unknown perpetrator and positive evidence of spermatozoa. The odds for conviction was more than six times more likely in unknown perpetrator and more than seven times more likely in cases where there was positive evidence of spermatozoa. One of the interesting findings in this study was the significance of the relationship between the victim and the offender. The victim's knowledge of the assailant was a significant independent factor for conviction. In contrast to one previous study that showed a positive correlation between known assailant and legal outcome[13] this study found positive association of conviction with unknown assailant. The positive association of conviction with unknown assailant in this particular study is explained by the fact that evidence of trauma was present in 96.6% of unknown assailant. As compared to 42.6% when the assailant was known making the odds of positive evidence of trauma more likely for unknown assailant than known assailant (OR=38, 95% CI- 5-283). The positive association of conviction with a stranger assailant has been well documented in studies that showed a positive correlation between a stranger as the assailant and legal outcome[7]. Studies have demonstrated that women are reluctant to pursue legal action if the assailant was known and if no injury occurred[7, 8]. The significant association be-

tween sperm-semen positivity and conviction is consistent with the few previous studies focused on this issue[8]. The significant positive associations of positive evidence of spermatozoa with conviction after adjusting for a number of possible confounding factors and assault characteristics is an important step in confirming the value of documenting evidence of spermatozoa in the forensic examination of sexual assault victims.

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Corresponding Author:

Birhanu Kebede, MD, MPH

Department of Obstetrics and Gynecology, Yekatit 12 Hospital Medical College

kebede.birhanu@yahoo.com

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CERVICAL CANCER SCREENING AND TREATMENT SERVICES IN SOUTH WEST SHOA ZONE OF OROMIA REGION

Hezkiel Petros, MD[1], Andarge Abie Ayele[1], BSc, MPH
[1]St. Luke Catholic Hospital , Waliso, Oromia Regional State, Ethiopia

ABSTRACT

INTRODUCTION: Global cervical cancer incidence increased by 0.6% annually for the last 30 years and reached 454,000 cases per year in 2010. Cervical cancer death rates have been decreasing but the disease still killed 200,000 women in 2010, of which 46,000 were aged 15-49 years in developing countries. There are an estimated 7,000 new cases of cervical cancer in Ethiopia per year; nearly 5,000 people are estimated to die of the disease per year.

OBJECTIVE: To describe outcome of cervical cancer screening services in Walliso St. Luke Catholic Hospital, to assess patient characteristics and associated factorsand to suggest recommendations based on findings

METHOD: Women who come for screening from September 2015-August 2016 at St. Luke Catholic Hospital in South West Shoa zone of Oromia region were included in the study. Patient sociodemographic characteristics, information on therapy and outcome were extracted from screening forms, log registration and patient files retrospectively with document review. Diagnosis of precancerous lesion is made by applying 3-5% acetic acid; positive precancerous lesions were treated with either cryotherapy or LEEP.

RESULT: The hospital screened a total of 1,004 clients with VIA, 73 clients had aceto-white lesion, 68 clients were eligible for cryotherapy treatment and 93% were treated with see and treat approach.

CONCLUSION AND RECOMMENDATION: The screening service is relatively good and with good treatment coverage rate, but the positivity rate is higher for some months so need to improve the quality of the screening and treatment services.

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INTRODUCTION:

Global cervical cancer incidence increased from 378,000 cases per year in 1980 to 454,000 cases per year in 2010 with a 0·6% annual rate of increase[1]. The majority of cases are found in developing countries; in Africa almost 60,000 women die of the disease each year[2]. Cancer patients in sub-Saharan Africa tend to present with advanced disease with low level of community awareness and lack of access to the diagnosis and treatment services[3]. The cancer burden in Africa is likely to increase as a result of increases in HIV. Recent studies have demonstrated that visual inspection with acetic acid (VIA) is an alternative screening method[4,5]. It is cheap and non-invasive, and can be done in a low-levelhealth facility like a health center[6]. More importantly, this "see and treat" method ensures adherence to treatment soon after diagnosis, hence stemming the problem of failing to honor patient referrals[7–9].

Cryotherapy as a method of treatment for precancerous lesions is effective[10,11] and easier to implement than other treatment modalities such as loop electrosurgical excision procedure (LEEP), loop excision of the transformation zone (LETZ) and cone biopsy [12].

Secondary prevention of cervical cancer through screening and treatment of precancerouslesions of the cervix is associated with an overall reduction of morbidity and mortality due to cancer of cervix[10, 13, & 14]. Against this background, Ethiopia launched the first comprehensive national action plan on non-communicable diseases (NCDs) in 2014 and national plan for prevention and control of cervical Cancer and Established a national steering committee on cancer control (co-chaired by the First lady of Ethiopia and the minister of health).

St. Luke Catholic hospital and collage of nursing and midwifery is situated in Wolliso town a capital town of South West Shoa zone Oromia regional state in collaboration with Doctors with Africa CUAMM. Oromia regional health bureau launched cervical cancer screening VIA and cryotherapy in the hospital and 11 health centers. Hence, this report highlighted the performance of cervical cancer screening service at St. Luke Catholic Hospital with VIA, VIA test positivity and treatment rate.

SUBJECTS AND METHOD

Women who come for screening from September 2015-August 2016 at St. Luke Catholic Hospital in South-West Shoa zone of Oromia region were included in the study. Patient socio demographic characteristics, information concerning therapy and outcome were extracted from screening forms, log registration and patient files retrospectively with document review.

Diagnosis of precancerous lesion is made by using 3-5% acetic acid applying over cervix and inspect-

ing the cervix after 1 min, the precancerous lesion is found to be positive if the clinician found aceto-white lesion in the Squamo-Columnar Junction (SCJ). Diagnosis of cervical cancer is made after punch biopsy which is sent to Addis for pathological analysis and turnaround time is 3-4 weeks.

For those clients with precancerous lesion positive and eligible for cryotherapy, the treatment is provided immediately with see and treats approach, whereas for the larger lesions the treatment modality is with LEEP or conizationaccording to the national cervical cancer screening and treatment guideline. For invasive early stage disease less than 2A are scheduled for possible radical hysterectomy and bigger stage disease were referred for possible chemo radiotherapy. Palliative care is provided to all cancer patients.

Ethical approval was obtained from St Luke Catholic Hospital ethical reviewboard (IRB) and no name or client identification information was used to assess the client socio- demographic and other related data.

RESULT

Totally 1,004 clients were screened with VIA from September 2015 to August 2016. From the total 1,004 clients, only 876 clients had full socio demographic data which makes the completeness of documentation of all relevant data. According to the document review conducted, from the total of 876 clients, majority of them (90%) were coming from South West Shoa zone followed by Gurage zone of Southern Nation and Nationality People Region (4.8%) and Jimma zone of Oromia region (0.3%). The district address of those clients came from South West Shoa zone were Woliso Urban, Woliso Rural and Goro districts with 52%, 23% and 8% respectively. The marital status of the clients was married 818 (93.4%) followed by divorced 25 (2.9 %) and widowed 18 (2.1 %) from the total. The clients had got the information about the screening services from different sources, according to document review, they have got the information from health care workers 699 (79.8 %), health development armies 63 (7.2 %) and health extension workers 20 (2.3 %).

Human immunodeficiency virus (HIV) sero status of clients were assessed and offered for HIV screening services. From 876 clients, 73 (10.6 %) clients had positive sero-status for HIV, and 590 (67.4 %) clients did not know their HIV sero-status.

The hospital screened a total of 1,004 clients with VIA. From those total screened clients with VIA, 73 (7.3%) clients had aceto-white lesion and the rest were found to be negative for precancerous lesion. From 73 precancerous lesion clients, 68 clients were eligible for cryotherapy treatment and five were not eligible due to big lesion (lesion involve more than 85% of the cervix). From those 73 VIA positive clients, 56.5% of the clients lie in

Table 1: -Sociodemographic characteristics of the study participants

Variable	No.	%
Source of information		
Health Care Workers	699	79.8
HDAs	63	7.2
Family	8	0.9
Mass media	5	0.6
HEWs	20	2.3
Friends	9	1.0
Others	72	8.2
Total	876	100
Address of the clients by zone of residency		
South West Shoa	788	90.0
Gurage	42	4.8
Jimma	3	0.3
West Shoa	2	0.2
Addis Ababa	2	0.2
Others	39	4.5
Total	876	100
Address of the clients by woreda of residency in South West Shoa zone		
Woliso Urban	413	52
Woliso Rural	179	23
Goro	63	8
Wonchi	36	5
Others	97	12
Total	788	100
Marital Status of the client		
Single	13	1.5
Married	818	93.4
Divorced	25	2.9
Widowed	18	2.1
Others	2	0.2
Total	876	100

the age range of 16-20 years, followed by greater than 20 years (31.9%) and less than 15 years (11. 6%).The marital status of precancerous clients was mainly married (89.4%) and the parities were mainly para 2 to 4 followed by parity above 5 (35.7%).

DISCUSSION

The VIA-positive rate is 7.3% out of 1,004 screened, 73 were positive (see table 1 & 2) varied in months the highest rate after April (11%-30%) go in line with the findings in Zambia as high as 28.0% to as low as 5.7% in Nigeria. However, the overall rate of approximately 7.3% positive results is in agreement with other studies and WHO recommendation of test positivity rate[5].

The target population was all women aged 30 - 50 years, and resident in the catchment area. In collaboration with the information, education and communication (IEC) team in the ministry of health (MOH), existing IEC materials on cervical cancer and its prevention were adapted and designed to local needs and aimed to motivate women to come for screening. Community mobilization was achieved through activities such as the use of mass media; plays; public, church, or funeral meetings; health education at schools; distribution of posters or pamphlets; or direct personal contact. Eighty percent of the clients have got the information from health education sessions in the hospital and only 5% from media the proportion is expected to increase as more media coverage in different language has already started.

Table 2: - VIA test result and patterns of test positive clients with different variables

VIA test result			
Negative	894	89.10%	93.5
Positive	73	7.30%	6.5
Suspicious	37	3.30%	
Total	1004	100	100
Single	1	1.5	1.5
married	59	89.5	89.5
divorced	4	6	6
widow	2	3	3
Total	74	100	100
Parity of VIA positive clients			
1	4	5.7	5.7
4-Feb	41	58.5	58.5
Above 5	25	35.7	35.8
Total	74	100	100
Age at marriage of VIA positive clients			
Less than 15	8	10.8	10.8
16-20	39	52.7	52.7
>20	22	29.7	29.7
Unknown	5	6.8	6.8
Total	74	100	100
Mensural cycle of VIA positive clients			
regular	39	52.7	52.7
irregular	16	21.6	21.6
Breast feeding	7	9.5	9.5
menopausal	8	10.8	10.8
Unknown	4	5.4	5.4
Total	74	100	100
Family planning utilization status of VIA positive clients			
Using FP	57	77	77
Not using FP	17	23	23
Total	74	100	100
History of STI infection for those VIA positive clients			
Had STI	14	21.20%	21.2
Had no history of STI	52	78.80%	78.8
Unknown	8	10.9	10.9
Total	74	100	100
HIV sero-status of VIA positive clients of the study participants			
HIV positive	7	9.5	9.5
HIV negative	58	79.5	79.5
UK	8	10.9	10.9
Total	74	100	100
VIA per month			
Sept	63	6.30%	
Oct	140	13.90%	
Nov	85	8.40%	
Dec	42	4.20%	
Jan	82	8.10%	
Feb	66	6.60%	
Mar	82	8.10%	
Apr	20	1.90%	
May	102	10.20%	
Jun	145	14.40%	
July	45	4.50%	
Aug	88	8.80%	

From the total positive clients, 93% of all VIA positive lesion were eligible for cryotherapy and treated with cryotherapy which gave a 993% treatment rate higher than other studies and WHO bench mark of 10-15% need LEEP services there is tendency of under diagnosis of

bigger lesion.

From the total 1,004 clients, 37 had suspicious lesion of whom 31 had invasive cancer and six were having chronic cervicitis/polyp had pathology specimen taken and eight were lost to follow up may be because of financial limitation and social reasons like lack of support systems and death. Currently, the hospital has started arranging car and fee for referral cases and communicate with *Mathiowos Wondu Yecancer* association for possible accommodation and support.

Eight (25.8%) had early stage disease compared to 16% from Black Lion Hospital (BLH) because patient had to spend long to arrive at oncology service of BLH. Whereas early stage 1B1-2 two had been operated at this hospital and others given appointment. Around 21/31 (67.7%) had stage 2b-3b and 2 (6.4%) had stage four and critical stage for whom only palliative care were provided 3.1% has invasive cancer much higher than baseline rate in many screening sites.

Is was compared to 1.7% different African countries WHO estimate is less than 1% in screening population because it referral center for the zone.

A total of 87.7% of all VIA-positive cases were eligible for cryotherapy demonstration project in six African countries and 97% received cryotherapy mostly with in the same day. Out of 5 cases who decline to take the treatment, 3 wanted to consult their husband and did not come back again.

In six African countries the majority of clients (63.4%) received cryotherapy within one week of initial screening. The single-visit approach enabled 39.1% of clients to be screened and treatedon the same day. However, over 39.1% of all clients eligible for cryotherapy did not receive treatment, for various reasons, including equipment not being in working order at the time of screening. Rates of VIA positivity varied greatly across sites, ranging from as high as 28.0% to as low as 5.7%. Nevertheless, the total rate of positive VIA results was 7.3%, which is in agreement with other studies. The high rate of positive results (28%) recorded in Zambia can be explained by the following facts. Those were a large number of women screened were in a very young age group (16–26 years), the period closes to sexual debut when human papillomavirus (HPV) infection is usually acquired, and leading to visible cervical changes consistent with HPV infection. Further, this is a period in life when squamous metaplasia of the cervix is prevalent a visual finding that can often be confused with precancerous change. Although Nigeria had a VIA-positive rate of 5.7%, the data from this demonstration project did not capture adequate social characteristics of the women. Thus, no conclusions can be made about the reason for the low rate of positive results, in the absence of information on lifestyle factors such as religion, number of sexual partners and sexual networking, and vaginal health. A number of sites were not able to offer the "screen and treat" approach, and this accounted for the time lag between testing and cryotherapy, and the women lost to follow-up. Women at a facility without cryotherapy equipment who had apositive VIA test and were eligible for cryotherapy were referred to a district hospital.

CONCLUSION AND RECOMMENDATION

In conclusion the screening service is going well. But the test positivity rate in some months was higher than the WHO recommendation and the clients referred for LEEP is below the World Health Organization (WHO) recommendation that might be due to skill gap of under diagnosis. Moreover, relatively higher clients are diagnosed with cancer that may be associated with low level of awareness and accessibilityof the service. There for it is recommended that the quality of the service provision strictly monitored, mentoring of the service providers conducted by experienced and senior staffs.

The awareness creation activities better be intensified to reach more clients at precancerous stage and

early stages of cervical cancer. Quality assurance (QA) of a screening program involves the systematic monitoring and evaluation of the various aspects of screening services and facilities to maximize the probability that the program is attaining the minimum standards of quality. Quality assurance of the cervical cancer screening program requires a robust system of program management and coordination, and assuring that all aspects of the service are performing adequately.

Corresponding Author

Hezkiel Petros, MD

St. Luke Catholic Hospital, Waliso, Oromia Regional State, Ethiopia

hezkielpet@gmail.com

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RESUMPTION OF POSTPARTUM SEXUAL INTERCOURSE AND USE OF MODERN CONTRACEPTIVE AMONG IN-UNION WOMEN IN ADDIS ABABA: CROSS SECTIONAL STUDY

Frewoini Tesfay, MD[1]; Eyasu Mesfin, MD[2]; Abel Gedefaw, MD, MPH[3*§]*

Department of Gynecology and Obstetrics, St. Paul's Millennium Medical College, Addis Ababa, Ethiopia.

Department of Gynecology and Obstetrics, College of Medicine and Health Sciences, AAU, Addis Ababa, Ethiopia

Department of Gynecology and Obstetrics, College of Medicine and Health Sciences, Hawassa University, Hawassa, Ethiopia

ABSTRACT

BACKGROUND: Data on postpartum sexual resumption is limited in Ethiopia.

OBJECTIVE: To determine the timing of postpartum sexual resumption, use of modern contraceptive and sexual morbidity associated with resumption among in -union women in Addis Ababa.

METHODS:

A facility based cross-sectional study was conducted from March 24 - August 04, 2014 at ten health centres of Addis Ababa involving 424 postpartum in–union women. Data were collected at 14th weeks of postpartum. The SPSS version 16.0 was used for data entry and analysis. Descriptive statics were done to determine the timing of sexual resumption, postpartum sexual morbidity and proportion of contraceptive use. Logistic regression analysis was fitted and odds ratios with 95% CI were computed to identify factors associated with contraceptive use while sexual resumption.

RESULT: More than three quarters (78.3%) resumed sexual intercourse within 14 weeks of postpartum. The mean and median time of sexual resumption was 6.4 weeks (±2.3) and 6 weeks respectively. Among those resumed sexual intercourse, three fourths (76.2%) were used modern contraceptives. The odds of contraceptive use while resuming sexual intercourse was determined by whether the index pregnancy was planned or not and resumption of menses. One fourth (26.15%) of women who resumed sexual intercourse had postpartum sexual morbidity and only 15% of them had sought medical care. Only 11% of the participants had ever been advised about postpartum sexual activity by a health care provider.

CONCLUSIONS: High number of postpartum women resumed sexual intercourse despite one in ten women resumed without contraceptive use. It was also a associated with high postpartum sexual morbidity, low health seeking behavior and low postpartum sexuality counseling practice by health care providers. Strategies need to be developed to address the identified problems.

KEY WORDS: postpartum, Sexual resumption, Contraceptive use, Ethiopia

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INTRODUCTION

Sexual practice during the postpartum period is an important element that has been identified in women's healthcare. World Health Organization (WHO) has outlined guidelines focusing the importance of counseling about postpartum resumption of sexual intercourse[1]. Postpartum sexual abstinence is a common practice by various communities worldwide with varying duration[2]. Approximately half of women by 5 - 6 weeks postpartum; 90% at third months postpartum; and at six months postpartum most women have resumed sexual intercourse[3-5].

Women's interest in avoiding pregnancy, especially in the first year postpartum, is well documented[6, 7]. Analysis of 27 countries demographic and health survey (DHS) found that only 3% of postpartum women wanted a baby within two years[7]. In Ethiopia only 5% of women during the 12-month postpartum period desire another birth within two years[8].

Although, the prevalence of contraceptive use during this period is limited[6-8], resulting to unintended pregnancies and unwanted childbearing[9]. Many postpartum women feel that they are protected from a subsequent pregnancy either because they are breastfeeding, amenorrheic or women's concerns during post-partum period focus on the newborn and its wellbeing[10]. However, in accordance with the WHO Medical Eligibility Criteria for Contraceptive Use, within the first month postpartum, women should be offered contraceptives[11].

Majority of mothers in the first three months after delivery usually experienced postpartum sexual morbidities like dyspareunia, lack of vaginal lubrication, difficulty in achieving orgasm, vaginal loosening, loss of sexual desire and bleeding or irritation after sexual intercourse[12, 13].

Postpartum sexual concerns also lack professional recognition, with health care providers focusing exclusively on the infant's wellbeing and women's contraceptive use. Many physicians and postnatal care workers are still lacking the knowledge and clinical skill to relay information about postpartum sexuality to their clients[13-15]. This is also true in Ethiopia. Reports on the sexual activity of women after childbirth in Ethiopia are scarce. Moreover, all of the authors and their colleagues, while practicing obstetrics in the study area had always difficulty in informing postpartum women about their sexuality based on the evidence of local data. So, this study was conducted to determine timing of postpartum women's resumption of sexual intercourse, postpartum sexual morbidity associated resumption and contraceptive use among in-union women in Addis Ababa, central Ethiopia.

SUBJECTS AND METHODS

A facility based cross-sectional study was conducted from March 24 to August 04, 2014 at ten health centres in Addis Ababa, the capital city of Ethiopia.

The study population were all in-union women who gave birth and came to the selected ten health centres for immunization of their babies at 14th week postpartum period during the study period. Fourteen weeks of postpartum period were selected as it is the 3rd Ethiopia paediatrics immunization (EPI) schedule and easy to access all postpartum women[16].

The sample size was calculated by considering the assumptions for single population

proportion formula: the proportion (P) =50%, anticipated proportion of in-union women who resume sexual intercourse within 14 weeks of postpartum as there is no previous study in the study area, Z = standard normal distribution value at 95% confidence level of Za/2 = 1.96, 5% of absolute precision, and 10% non-response rate. Hence, the total sample size was 422. However, there were 445 in-union women during the study period in the selected health centers that fulfilled the inclusion criteria and therefore, all were included. Out of ten sub-cities of Addis Ababa, one health center was selected from each sub-city randomly using a lottery method. The total sample size was proportionally allocated to each health center depending on the weekly immunization rate as it indirectly told us the number of postpartum women. Only in-union women, at least 18 years of age and who were in their 14th weeks of the postpartum period were included in the study.

The independent variables were socio-demographic factors, reproductive and obstetric factors and behavioral characteristics of the participants. The dependent variables were time to resume sexual intercourse, contraceptive use during sexual resumption and its determinants; and postpartum sexual morbidity associated with resumption.

Resumption of sexual intercourse was defined as having the first penetrative vaginal sexual intercourse after childbirth. In-union women, in this study, means those women living together with their partner during the study period

Pre-tested and semi-structured questionnaires using face-to-face interview by caregivers were used for data collection. Postpartum sexual morbidities were assessed using Brief Sexual Symptoms Checklist for Women (BSSC-W) [17]. Pre-testing was undertaken on 24 postpartum women attending immunization clinics at 14th weeks in other Health Centers. Appropriate modifications were carried out accordingly. Data were collected by ten clinical nurses (one in each health center) supervised by the investigators. All the data collectors were from other health institutions. A two days comprehensive training was given to data collectors. The questionnaire was first prepared in English and then translated into Amharic (the local language), and back into English to ensure consistency. The Amharic version was used to collect the data. Then, the questionnaires were coded and entered in to Statistical Package for the Social Sciences (SPSS) windows version 16 for fur-

ther analysis. Data were summarized and presented using descriptive statistics. Bivariate and multivariate logistic regression analyses were performed to test associations. Variables having p value ≤ 0.2 in the bivariate analyses were entered into a multivariate logistic regression model to control confounding. Odds ratio with their 95% confidence intervals (CI) were computed to identify the presence and strength of association, and statistical significance was declared if $p < 0.05$.

Ethical clearance was obtained from Addis Ababa University (AAU) Medical faculty (MF), department of obstetrics and Gynecology ethical clearance committee, and AAU MF institution review board (IRB). Permission also was obtained from the Addis Ababa city administration Health bureau and medical directors/matron of each health centers. The study participants were informed about the purpose of the study and data collections were conducted after getting written informed consent. The privacy of the participants was secured by interviewing them in private room after they completed their infant immunization.

RESULT

Out of 445 in-union women approached during the study period, 424 of them were gave informed consent making the response rate of 95.3%. Two third of the participants (60%) were in the age group of 26-35 years. The mean age of the participants was 28.5 years (±4.9) while the youngest and the oldest age was 18 and 45 years respectively. The husband was the

Table 1. Socio-demographic characteristics of study participants at the selected ten health centers of Addis Ababa, Central Ethiopia,

March 24 to August 04, 2014. N=424

Variables	No	%	Remark
Age in years			Mean =28.5 (±4.86)
18-25	129	30.4	
26-35	254	59.9	
>35	41	9.7	
Religion			
Orthodox Christian	275	64.9	
Muslim	87	20.5	
Protestant Christian	51	12	
Catholic Christian	11	2.6	
Ethnicity			
Amhara	196	46.2	
Oromo	86	20.3	
Tigre	53	12.5	
Gurage	72	17	
Others	17	4	
Marital status			
Legally married	363	85.6	
Not legally married	61	14.4	
Duration of living together with partner			Mean :4.2 (±3.48)
≤1 year	71	16.7	
2-4 years	221	52.1	
≥5 years	132	31.1	
Educational status of participant			
No formal education	48	11.3	
Primary school (1-8)	120	28.3	
Secondary school (9-12)	147	34.7	
Above secondary school	173	40.8	
Occupation			
House wife	188	44.3	
Civil servant	65	15.3	
Private/self employed	163	38.4	
Student	8	1.9	
Main source of family income			
Husband	263	62	
Wife	21	5	
Husband and wife	140	33	
Secondary school (9-12)	147	34.7	
Above secondary school	173	40.8	
Occupation			
House wife	188	44.3	

***Sidama, Silte**

Table 2. Reproductive and obstetrics characteristics of study participants at selected ten health centers of Addis Ababa, Central Ethiopia, March 24 to August 04, 2014. N=424

Variables	No.	%	Remark
Parity			Mean :1.86 (±0.86)
Primiparous (para 1)	225	53.1	
Multiparous (≥2)	199	46.9	
Nature of index pregnancy			
Planned	351	82.8	
Unplanned	73	17.2	
Number of index pregnancy			
Singleton	413	97.4	
Twin	11	2.6	
ANC booking			
Yes	415	97.9	
No	9	2.1	
Place of delivery			
Health center	181	42.7	
Government hospital	183	43.2	
Profitable private hospital/clinics	60	14.2	
Mode of delivery			
Vaginal without episiotomy/tear	167	39.4	
Vaginal with episiotomy/tear	147	34.7	
Instrumental*	16	3.8	
Emergency Cesarean section	36	8.5	
Elective Cesarean section	58	13.7	
Obstetric complication during index pregnancy			
Hemorrhage (APH & PPH)	28	6.6	
Hypertensive disorders	13	3.1	
Premature rupture of membranes	22	5.2	
Not at all	361	85.1	

***Forceps and vacuumed delivery**

main source of income for the family for two thirds (62%) of the participants (Table 1).

Fifty-three percent of the participants were their first birth. The proportion of unplanned pregnancy and antenatal care (ANC) booking during the index pregnancy were 17.2% and 97.9 % respectively. Three out of four women (77.8%) gave birth vaginally

(Table 2).

During the study period, nine out of ten (90.1%) participants were breast feeding either exclusively or mixed type. Mensus had resumed for 55% of the participants. Out of the total participants, more than three quarters (78.3%) had resumed sexual intercourse within 14 weeks of postpartum period. The mean and median time of sexual resumption was 6.4 weeks (±2.3) and six weeks respectively. The earliest period of sexual resumption was within a week of birth. Almost three quarters (73.4%) of them resumed within the puerperium (≤ 6 weeks) and 16.5% of them within 4 weeks of delivery (Figure 1).

Out of those who resumed sexual intercourse (n=332), three fourths (76.2%) were used modern contraceptives. Depo-Provera was the most common type (39.4%) of modern contraceptives used by the postpartum women. Moreover, the mean time of sexual resumption was affected only by the mode of delivery, with the earliest and latest being

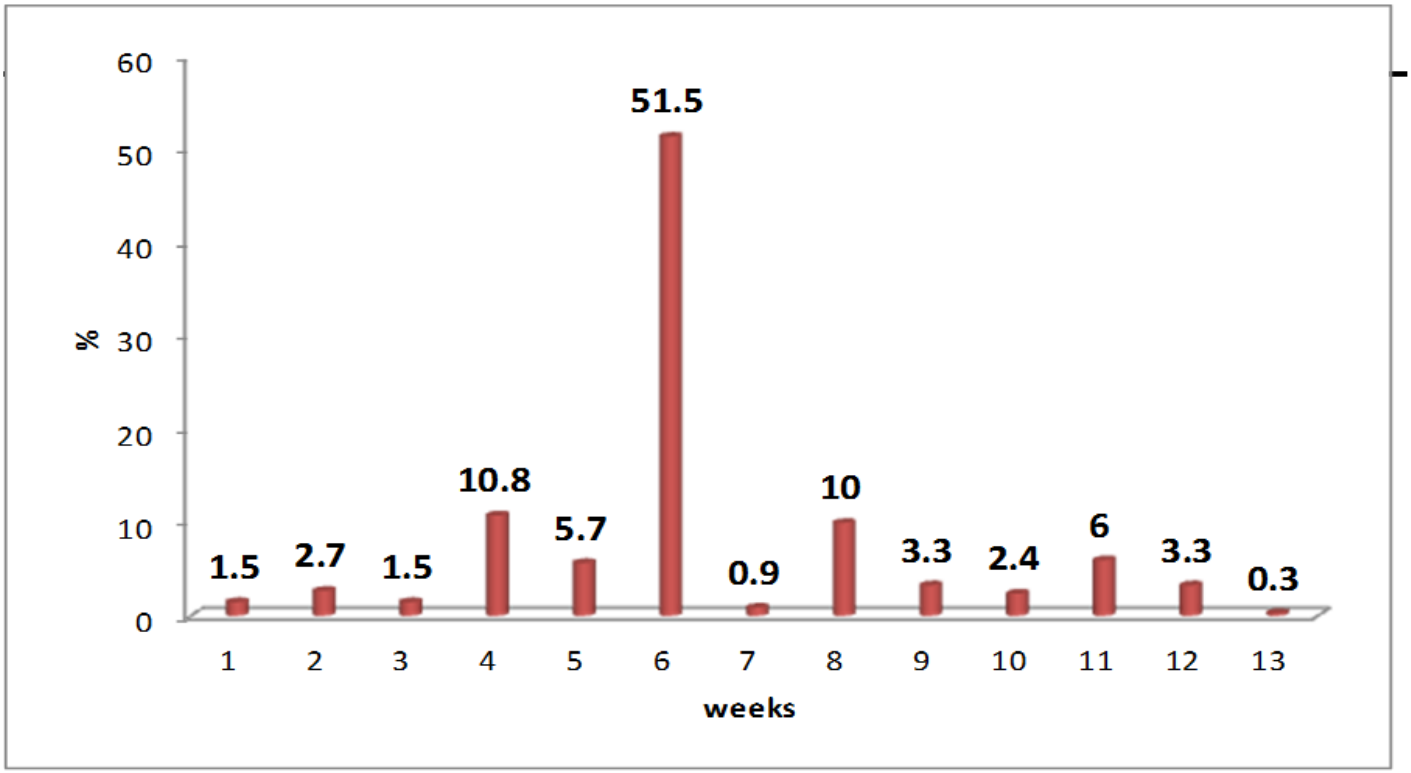

Figure *1*: Timing of postpartum sexual resumption of the study participants in the selected ten health centers of Addis Ababa, Central Ethiopia, March 2014, n=332

One quarter (26.2%) of the participants who resumed sexual intercourse had at least one sexual problem during resumption. However, only 15% of them had sought medical care. Only 11% of the participants had ever been advised about postpartum sexual activity by the health care providers. Nearly one third (33/92) of participants had problems like conflict with their partner due to not resuming sexual intercourse (Table 3).

Out of 18 independent variables, ten variables had significant association with use of modern contraceptives during sexual resumption at 14 weeks postpartum in bivariate analysis. However, only two variables had significant association in multivariate analysis. The odds of contraceptive use while resuming sexual intercourse was determined by whether the index pregnancy was planned or not (AOR=2.65, 95% CI: 1.19, 5.92) and resumption of menses (AOR= 2.84, 95% CI: 1.58, 5.13) see Table 4.

DISCUSSION

In the present study, the researchers revealed the timing of postpartum sexual resumption focusing on the immediate postpartum period. The researchers also revealed postpartum concerns like risk of untended pregnancy, sexual morbidity associated with resumption and the degree of postpartum sexual education by the health care providers. Moreover, the study conducted at health centers to represent all categories of women.

Table 3: Postpartum sexual resumption and contraceptive use of the participant at the selected ten health centers of Addis Ababa, Central Ethiopia, March 24 to August 04, 2014.

Variables	No.	(%)
Infant feeding status		
Breast feeding	382	90.1
Formula feeding	42	9.9
Return of menses		
Yes	233	55
No	191	45
Do you resume sexual intercourse after delivery?		
Yes	332	78.3
No	92	21.7
When did you resume intercourse in weeks N= 332	Mean :6.42(±2.28), Median: 6	
During puerperium (≤6)	245	73.8
After puerperium (>6)	87	26.2
Use of modern contraceptive	N= 332	
Yes	254	76.2
No	79	23.8
Type of contraceptive used	N=254	
Pills	42	16.5
Depo-Provera	100	39.4
Implant	44	17.3
IUD	63	24.8
Condom	5	2
Sexual problem during resumption N=332		
Genital tear	11	3.3
Vaginal bleeding	9	2.7
Vaginal discharge	16	4.82
Lack of desire	26	7.83
Arousal problem	10	3
Dryness	3	0.9
Pain	12	3.6
Not at all	245	73.85
Did you seek medical advice for sexual problem? N=87		
Yes	13	14.9
No	74	85.1
Ever advised n about postpartum sexual activity: 424		
Yes	49	11.6
No	375	88.4
Any problem due to not resumption of intercourse: N=92		
Conflict with partner	16	17.4
Get stressed	17	18.5
Nothing happened	59	64.1

for elective Cesarean Section (CS) and instrumental delivery respectively [vaginal delivery without episiotomy, 6.05 (±2.18); vaginal delivery with episiotomy/tear 6.79(±2.18); instrumental delivery 7.5 (±2.78); elective CS 5.58 (±1.12) and emergency CS 6.62 (±2.28); p-value (0.015).

The mean age (±SD) of the participants was 28.5 years (±4.9) and 60 % of them were between 26-35 years which is similar to 2011 EDHS of Addis Ababa City 28.2 years (±5.3) and 62.3% between 25-34 years[8]. Moreover, 46.9% of our participants gave birth 2 - 4 times and 22.2% of them gave birth by CS which is similar to the 2011 EDHS report of 50.8% and 24.4% respectively[8]. This may indicate that though the study was done at institution level, it may possible that Addis Ababa city administration is

representative.

In a breast-feeding woman, lactation can serve as a contraception for up to six months, but only if it is only exclusively breast feeding and mensus is not returned[18]. However, in our study 55% of the participant's mensus had resumed within the 14th postpartum weeks. This could be due to limited proportion of exclusive breast-feeding rate in the study area.

The 2011 EDHS data showed that the median duration of exclusive breast feeding was one month in the study area. The other possible problem may lie in the fact that use of hormonal methods of contra-

Table 4. Binary and multiple logistic regression analysis of contraceptive use before postpartum sexual resumption within 14weeks of postpartum period at selected ten health centers of Addis Ababa, Central Ethiopia, March 24 to August 04, 2014.

Variables	Contraceptive use		OR(95%CI)	
	Yes	No	COR	AOR
Age				
18-25	81	17	2.50(1.02-6.12)	1.10(0.37-3.27)
26-35	151	51	1.55(0.70-3.44)	0.86(0.33-2.26)
>35	21	11	1	1
Place of delivery				
Health center	125	29	1.67(0.77-3.64)	1.54(0.57-4.15)
Government hospital	97	38	0.99(0.46-2.12)	1.22(0.49-3.09)
profitable private hospitals/clinics	31	12	1	1
Pregnancy type				
Planned	221	59	2.34(1.25-4.39)	2.65(1.19-5.92)
Unplanned	32	20	1	1
Infant feeding				
Breast feeding	232	68	1.79(0.82-3.89)	1.15(0.47-2.80)
Formula feeding	21	11	1	1
Marital status				
Legally married	216	73	0.48(0.20-1.18)	1.15(0.47-2.80)
Not legally married	37	6		1
Mode of delivery				
Vaginal delivery without episiotomy	96	38	1.07(0.52-2.22)	0.97(0.39-2.41)
Vaginal delivery with episiotomy/tear	101	19	2.26(1.02-4.99)	1.74(0.69-4.43)
Instrumental delivery	6	6	0.42(0.12-1.55)	0.43(0.10-1.82)
Elective CS	17	2	3.61(0.73-17.74)	5.04(0.89-28.70)
Emergency CS	33	14	1	1
Status of mensus				
Resumed	168	34	2.62(1.56-4.38)	2.84(1.58-5.13)
Not resumed	85	45	1	1
ANC booking				
Yes	250	76	3.29(0.65-16.64)	1.36(0.17-11.05)
No	3	3	1	1
Educational status				
No formal education	32	8	0.94(0.37-2.41)	0.94(0.23-3.76)
primary school	82	22	0.88(0.43-1.79)	1.48(0.56-3.91)
secondary school	67	32	0.49(0.25-0.97)	0.57(0.25-1.31)
Above secondary school	72	17	1	1
Religion				
Orthodox Christian	141	57	1.06(0.27-4.24)	0.75(0.14-4.02)
Muslim	66	14	2.02(0.46-8.79)	1.84(0.31-11.01)
Protestant Christian	39	5	3.34 (0.65-17.27)	2.79(0.42-18.59)
Catholic Christian	7	3	1	1

ceptive, particularly oral contraceptives, may induce bleeding that mimics menses.

Evidence from the present study showed that more than three quarters 78.3 % (±4.1) and 73.4 % of women had resumed sexual intercourse within 14 weeks and puerperium respectively. This finding is higher than previous reports of most developing countries. A similar study done in Nigeria found that 67.6% and 3.5% resumed within 14 weeks and puerperium respectively[19].

Another study in western Nigeria, Sagamu found that 65% and 20 % resumed within three months of delivery and within puerperium respectively[20]. A similar study in India found that 28.3% and 74.3% resumed within 6 and 12 weeks[21]. A study done in Kampala, Uganda[22] only half (49.3%); Sarawak, Malaysia[23] only 37.4 % and in Iran[24] only 47 % had resumed within Puerperium. It is also higher than reports of 35% in Thailand[25], 52.1% in china[26], 47% in Germany [27], but lower than 89% and 90% from the UK and USA respectively[12, 28].

The mean time to resumption of coitus was 6.42 weeks (±2.28), also earlier than other studies; Uganda 7.87 (±4.9)[22], Nigeria 8.2 (±2.9) [19], Malaysia 7.2 (±3.6)[23], Iran 8.1(±3.9)[24] and Turkey 7.06 weeks[29]. The relatively high rate of early resumption in our study may be attributable to the study participants being in-union women unlike other studies like Nigerian where the main reason for non-resumption was unavailability of a partner[19, 20]. Moreover, there were differences in postpartum periods where different studies were carried out. The other possible explanation for the difference is due to diverse cultural and religious practices and sexual attitudes of women in different parts of the world.

Commencement of postpartum sexual intercourse may also herald a greater risk of unintended pregnancies. In our study the only determinants of contraceptive use were the return of menses and whether the index pregnancy is planned or not. This is worrisome, as postpartum women have a risk of getting pregnant even before the onset of menstruation and 10% of the participants resumed sexual intercourse without using contraceptives. This might be explained by the fact that ammenhorric women would underestimate the risk of pregnancy by assuming that amenorrhea could guarantee protection against pregnancy. However, the finding is better than a Nigerian study result (19.1%) [19], other results were Malaysia (44%)[23], Kenya (46%)[30], Rwanda (50.4%)[31], India (36.3%)[21], and Northern Ethiopia (20.7%)[32].

Sexual morbidities appear to be common on initiation of postpartum sexual intercourse[15, 33]. In this study, one quarter (26%) had at least one sexual problem on resumption. Similar morbidity was also reported in Uganda (22.2%)[22] and Gambia (27%)[34]. Higher sexual morbidity than this study was also noted in Nigeria (63%)[19], China (71%)[26] and Britain 83% [35]. However; only 15% of the study partic-

ipants had sought medical care. This is also true in many other studies that noted that many women (up to 25%) with postpartum health problems did not consult a health professional [36, 37]. This could be due to women's mistaken ideas about sex and/ or the perception that all postpartum sexual problems will resolve on their own[38].

This study found that only 11% of the participants were ever advised by their health care providers about postpartum sexuality. A study done in Britain found that only 18% of postpartum women at a London teaching hospital had received information about changes in postpartum sexual function [12]. The lack of counseling may reflect poor health care provider knowledge regarding the many factors affecting postpartum sexual changes.

The strength of the study included only in-union women so that the effects of being single or unmarried on the resumption of postpartum sexual intercourse were avoided. As well, the study was conducted at 14 weeks postpartum so that it avoids recall bias by the participants. On the other hand, there were limitations of the study. These were the study mainly focuses on the time of sexual resumption rather than the degree of sexual function. Similarly, the study mainly focuses on the timing of postpartum penetrative vaginal intercourse.

CONCLUSION AND RECOMMENDATION

High number of postpartum women resumed sexual intercourse despite significant of them resumed without contraceptive use. It was also a associated with high sexual morbidity, low health seeking behavior and low postpartum sexuality counseling practice by health care providers. Postpartum sexuality needs to be discussed before discharge and strategies need to be developed to address the identified problems.

CONFLICT OF INTEREST:

None of the authors of the above manuscript has declared any conflict of interest.

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Corresponding Author:

Frewoini Tesfay, MD

Department of Gynecology and Obstetrics, St. Paul's Millennium Medical College, Addis Ababa, Ethiopia

tfrewoini2005@gmail.com

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POST-ABORTION CONTRACEPTIVE ACCEPTANCE AND CHOICE DETERMINANTS AMONG WOMEN RECEIVING ABORTION CARE AT SAINT PAUL'S HOSPITAL, ADDIS ABABA, ETHIOPIA

Matiyas Asrat[1], MD; Delayehu Bekele[2], MD, MPH; Sarah D. Rominski[3], PhD
[1-2]Saint Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia
[3]Department of Obstetrics and Gynecology, University of Michigan

ABSTRACT

BACKGROUND: The Ethiopian DHS in 2016 estimates that 412 women died of pregnancy related causes for every 100,000 live births. In 2008, an estimated 382,000 induced abortions were performed in Ethiopia. To reduce rates of unplanned pregnancy and unsafe abortion, increased access to high-quality contraceptive care is needed.

OBJECTIVES: To determine the contraceptive acceptance rate and examine factors associated with choice of contraception, in particular modern and long acting methods, in women after an abortion.

METHODS: A cross-sectional study was undertaken at Saint Paul's Hospital Millennium Medical College in Addis Ababa, Ethiopia. Women who received post abortion care service and had induced abortion from January to June 2015 were included. Logistic regression was used to determine factors associated with acceptance and choice of method of contraceptives.

MAJOR FINDINGS: A total of 552 women were included in the study; 90.6% of them adopted modern contraception post-abortion and 19% received long acting reversible contraceptives.

Multivariable analysis showed that being a housewife, married and parity greater than one had statistically significant association with the odds of adopting any modern method of contraception after abortion. Adoption of LARC was positively associated with being student, with parity greater than one and induced type of abortion.

CONCLUSION: The post abortion contraceptive acceptance rate was higher than other studies done in Ethiopia. Higher parity, being married and a housewife were independent predictors of modern contraceptive method acceptance. Induced abortion, higher parity and being student were significant predictors of adoption of LARC.

KEYWORDS: Abortion, Contraception, Long acting reversible contraceptive, Choice, Ethiopia

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INTRODUCTION

The Ethiopian Demographic and Health Survey (DHS) in 2016 estimates that 412 women died of pregnancy related causes for every 100,000 live births[1]. The World Health Organization (WHO) estimates that in Eastern Africa, unsafe abortion accounts for one in seven maternal deaths[2]. In a 2001–2002 study in a major university hospital in Addis Ababa, post-abortion complications were one of the three leading causes of maternal mortality, contributing to 28.9% of the deaths[3].

In 2008, an estimated 382,000 induced abortions were performed in Ethiopia. Overall, about 42% of pregnancies were unintended. To reduce rates of unplanned pregnancy and unsafe abortion, increased access to high-quality contraceptive care is needed[4].

There is a large gap between actual fertility and women's average preferred family size in Ethiopia. Unmet need for family planning is 22% among married women[1]. Promoting the use of contraceptive methods to prevent unwanted pregnancies is one of the most effective strategies to reduce abortion rates and related maternal morbidity and mortality[5-7].

Studies investigating post-abortion contraception practices demonstrate that method adopted varies widely depending on individual demographics and context[5, 8-13]. Addressing women's reproductive health needs requires a more focused approach to delivering client-centered care [(8)]. There is the need to implement family planning services targeted to women in post abortion because it is the ideal period of high contraceptive demand among women reducing the risk of unwanted pregnancy and therefore unsafe abortion[13].

Women offered immediate post abortion contraception are more likely to choose the intrauterine device (IUD) and implant than women without a recent abortion history. Increasing access to immediate post abortion long acting reversible contraceptives is essential to preventing repeat unintended pregnancies[9].

Around 1,200 women receive abortion care in the hospital annually (Statistics office of the hospital). The main aim of this paper was to determine the contraceptive acceptance rate and to examine factors associated with choice of contraceptive, in particular modern and long acting methods, after an abortion.

SUBJECTS AND METHOD

Cross-sectional study was conducted from January to June 2015. Data were gathered by conducting patient exit interview on women who received abortion care service and treated for complications of abortion in the study period at the time of discharge. In the hospital all women were counseled on post abortion contraceptives as part of the standard care. Those who agreed to use contraceptive were provided the method of their choice for

free in the same ward before being discharged.

All patients treated in the study period were invited to participate in the study. Women who died before being discharged from hospital were excluded from the study. No sample size calculation was conducted as all patients on the study period were included in the study.

The independent variables were age, place of residence, level of education, occupation, religion, marital status, gravidity, parity, number of living children, number of previous abortions, gestational age at the time of abortion, induced or spontaneous abortion, planned or unplanned pregnancy, and previous contraceptive use. The dependent variables were contraceptive acceptance and types of modern contraceptive chosen.

Concerning operational definitions look the following. Abortion was defined as termination of a pregnancy before 28 weeks of gestation. Spontaneous abortion is defined as an abortion occurring without any medical or surgical means to empty uterus. Induced abortion is defined as an abortion that occur with any medical or surgical intervention either in or outside the hospital. Post abortion care (PAC) is defined as management of incomplete abortion and complications resulting from unsafely induced or spontaneous abortion. Type of contraception adopted was originally collected categorically. The pills, implant, condom, injectables, implant, IUD and bilateral tubal ligation were classified as modern methods, and Implants and IUDs were classified as Long-acting reversible contraceptive (LARC) method.

Data were collected using a structured questionnaire. The questionnaire was first prepared in English then translated into the local language (Amharic) and data collected through exit interview at the time of discharge of the women. Data collection was done by nurses, who were not involved in the care of the women, after orientation by the principal investigator and a supervisor. An operational manual for the study, with detailed instruction to the data collectors, was prepared. Each questionnaire was checked for completeness by supervisor and coded every two weeks. Those with incomplete data were omitted.

The collected data were entered into an Excel spreadsheet and analyzed using SPSS Windows version 20.0. Frequencies and cross tabulations were used to summarize descriptive statistics of the data for presentation. Bivariate analysis was used primarily to check which variables had association with the dependent variables individually. All variables found to have an association with the dependent variables were then entered into logistic regression for controlling the possible effect of confounders and finally all the variables which had significant association were identified on the basis of OR, with 95%CI and p-value <0.05 to fit into the final regression model.

A formal letter of approval was obtained from the college's ethical review committee. Permission to conduct the study was taken from the hospital administration. Informed consent was taken from each woman and she was informed of her right to exit from the interview any time. Each woman was told the participation was voluntary.

There were no direct benefits to the women for being a part of this study. The only potential risk was that of data being seen by people not on the study team. In order to reduce this potential risk, all data were de-identified before it is entered into the study database. All data were collected and stored anonymously. The study team did not collect any identifying information about participants.

RESULTS

A total of 574 women received abortion care over the study period of which 559 (97.4%) were included in the study. Fifteen women were not included; six of them did not give consent and nine of them were discharged from the hospital before being interviewed. There were 552 (98.75%) from 559 women who had complete data recorded for all the variables included in the final analysis.

Most were young, uneducated or attended only primary school, and married. The mean (± SD) age of the respondents was 26.55 (±5. 60) years and the majority (32.2%) of the respondents were in the age group of 25-29 years. The majority of the respondents were urban dwellers from Addis Ababa (72.1%) and one third of them employed (34.2%) see Table 1.

Table 1 Demographic characteristics at the time of the abortion of women receiving abortion care at Saint Paul's hospital from January to June 2015.

	No. (%)
Age group (years)	52 (9.2%)
< 19	
20-24	157 (28.4%)
25-29	178 (32.2%)
30-34	98 (17.8%)
35-49	68 (12.3%)
Residential area	
Rural	74 (13.4%)
Urban (outside of Addis Ababa)	80 (14.5%)
Urban (in Addis Ababa)	398 (72.1%)
Level of education	
Not educated	153 (27.7%)
Primary	218 (39.5%)
Secondary	122 (22.1%)
Tertiary*	59 (10.7%)
Religion	
Orthodox	397 (71.9%)
Muslim	110 (19.9%)
Others**	45 (8.2%)
Occupation	
Unemployed	166 (30.1)
Student	28 (5.1%)
Employed	189 (34.2%)
Housewife	169 (30.6%)
Marital status	
Single	91 (16.5%)
Married	455 (82.4%)
Divorced and widowed	6 (1.1%)

*college, university

**protestant, catholic

Table 2 Reproductive characteristics at the time of the abortion of women receiving abortion care at Saint Paul's hospital from January to June 2015.

	No. (%)
Parity	
Nulliparous	243 (44%)
Primiparous	117 (21.2%)
Above primiparous	192 (34.8%)
Previous abortion	
No	415 (75.2%)
Yes	137 (24.8%)
Gestational age (current abortion)	
1st trimester	368 (66.7%)
2nd trimester	184 (33.3%)
Current abortion	
Spontaneous	478 (88.6%)
Induced	74 (13.4%)
Method of abortion	
Medical	91 (16.5%)
Surgical	449 (81.3%)
Both medical and surgical	12 (2.2%)
Intended pregnancy	
Yes	423 (76.6%)
No	129 (23.4%)

Table 3 Contraceptives characteristics before abortion of women receiving abortion care at Saint Paul's hospital from January to June 2015.

	No. (%)
Ever use of modern family planning method	
Yes	350 (63.4%)
No	202 (36.6%)
Last modern family planning method used	
None	203 (36.8%)
Pills	78 (14.1%)
Condom	3 (0.5%)
Injectables	231 (41.8%)
Implant	25 (4.5%)
IUD	12 (2.2%)

While women had an average of 2.6 (±1. 82) pregnancies, the average number of child birth was 1.28 (±1. 65). About two third of the abortions occurred in the first trimester of the pregnancy. More women came to the health facilities seeking post-abortion care (88.6%) than safe abortion (13.4%). Most of the pregnancies were intended (76.6%) as shown in the Table 2.

About 63% of women were using a modern method contraceptive method prior to presenting for abortion-related services. From this, the majority were using injectables (66%) as last modern family planning method (Table 3). About 90.6% of women adopted some method of contraception post abortion. Injectables were chosen by more than half of all the women 310 (56.2%). Nearly 19% of the clients received LARC.

Table 4 Post abortion contraceptives characteristics of women receiving abortion care at Saint Paul's hospital from January to June 2015.

	No. (%)
Accepted a post abortion modern contraceptive method	
No	52 (9.4%)
Yes	500 (90.6%)
Accepted a post abortion long acting reversible contraceptive method	
No	449 (81.3%)
Yes	103 (18.7%)
Method of contraceptive adopted after the abortion.	
None	52(9.4%)
OCP	81 (14.7%)
Condom	4 (0.7)
Injectables	310 (56.2%)
Sterilization*	2 (0.4%)
Implant	91 (16.5%)
IUD	12 (2.2%)
Client fertility choice	
Stop childbearing	18 (3.6%)
Postpone childbearing	482 (96.4%)

* bilateral tubal ligation

One in ten women elected not to use any contraception (52; 9.4%) see Table 4.

Nearly 43% of women left the facility with the same contraceptive method they had previously been using. Specifically, 71% of women who had previously been using injectables left with injectables, 34.6% of women who had previously been using pills left with pills, 28% of women who had previously been using implants left with implants and 19% of women using no method continued to use no method (Table 5).

Multivariable logistic regression showed that being housewife (adjusted odds ratio [AOR], 3.43; 95% CI, 1.20-9.80), married (AOR, 3.31; 95% CI, 1.41-7.74) and parity greater than one (AOR, 2.70; 95% CI, 1.04-7.03) had statistically significant association with the odds of adopting any modern method of contraception after abortion. Age groups, residential area, educational level, religion and type of abortion were not significantly associated with the odds of leaving the post-abortion care services with a modern family planning method (Table 6).

The odds of adoption of a LARC was positively associated with being student CI, 1.50-14.22), with parity greater than one (AOR, 2.21; 95% CI, 1.12-4.36) and induced type of abortion (AOR, 2.91; 95% CI, 1.46-5.80). However, it was negatively associated with tertiary level of education (AOR, 0.66;

Table 5: Pre and post abortion contraceptive methods among women who received abortion care at Saint Paul's hospital from January to June 2015.

		Method of contraceptive adopted							
		Pills	Condom	Injectables	Implant	IUD	None	Steri-lization	Total
Last contraceptive method used	Pills	27(34.60%)	0(0%)	38(48.70%)	11(14.10%)	1(1.30%)	1(1.30%)	0 (0%)	78(100%)
	Condom	0(0%)	1(33.30%)	1(33.30%)	1(33.30%)	0(0%)	0(0%)	0 (0%)	3(100%)
	Injecta-bles	24(10.30%)	0(0%)	165(71.10%)	25(10.80%)	5(2.20%)	13(5.60%)	0 (0%)	232(100%)
	Implant	3(12%)	0(0%)	12(48%)	7(28%)	3(12%)	0(0%)	0 (0%)	25(100%)
	IUD	1(8.30%)	0(0%)	8(66.70%)	2(16.70%)	1(8.30%)	0(0%)	0 (0%)	12(100%)
	None	26(12.90%)	3(1.50%)	86(42.80%)	45(21.90%)	2(1%)	38(18.90%)	2 (1%)	202(100%)

95% CI, 0.10-0.93), being married (AOR, 0.46; 95% CI, 0.25-0.86) and with previous use of family planning (AOR, 0.51; 95% CI, 0.31-0.85). (Table 7)

DISCUSSION AND CONCLUSION

The level of post-abortion contraceptive acceptance in this study was 90.6%. Parity greater than one, being married, and being a housewife increased the odds of adopting modern family planning methods. Nearly 19% of this study sample adopted a LARC method. The odds of uptake of LARC increased with parity greater than one, being student and induced type of abortion. The odds of such uptake decreased with tertiary level of education, being married and with previous use of family planning.

The 90.6% of post-abortion clients who accepted contraception is below a study conducted in India and one in Brazil which found 100% (14) and 97.4% (15) acceptance respectively. A study conducted in Tanzania found post-abortion contraceptive use of 90%, similar to this study finding[5]. However, the result of this sudy found a higher rate of post-abortion contraception acceptance

Table 6 Association of variables with contraceptive acceptance after pregnancy termination among women who received abortion care at Saint Paul's hospital from January to June 2015.

Contraceptive acceptance			COR (95%CI)	AOR (95%CI)
	No	Yes		
Age group (years)				
< 19	7	44	1	1
20-24	17	140	1.31(0.51-3.36)	0.78(0.25-2.41)
25-29	18	160	1.41(0.56-3.60)	0.48(0.15-1.57)
30-34	5	93	2.96(0.90-9.85)	0.80(0.17-3.63)
35-49	5	63	2.01(0.60-6.73)	0.36(0.08-1.70)
Residential area				
Rural	7	67	1	1
Urban (outside of Addis Ababa)	6	74	1.29(0.41-4.03)	1.85(0.52-6.59)
Urban (in Addis Ababa)	39	359	0.93(0.41-2.24)	1.70(0.58-4.95)
Level of education				
Not educated	11	142	1	1
Primary	24	194	0.63(0.30-1.32)	0.72(0.29-1.77)
Secondary	8	114	1.10(0.43-2.84)	0.93(0.30-2.81)
Tertiary	9	50	0.43(0.17-1.10)	0.46(0.14-1.51)
Religion				
Orthodox	36	361	1	1
Muslim	13	97	0.74(0.38-1.46)	0.58(0.27-1.26)
Others	3	42	1.40(0.41-4.73)	1.68(0.45-6.62)
Occupation				
Unemployed	22	144	1	1
Student	6	22	0.56(0.20-1.54)	1.03(0.29-3.70)
Employed	19	170	1.37(0.71-2.63)	1.39(0.65-2.96)
Housewife	5	164	5.01(1.85-13.57) *	3.43(1.20-9.80) *
Marital status				
Single	21	70	1	1
Married	26	426	4.41(2.38-8.16) *	3.31(1.41-7.74) *
Divorced and widowed	2	4	0.600(0.103-3.509)	0.51(0.07-3.71)
Parity				
Nulliparous	35	208	1	1
Primiparous	7	110	2.64(1.14-6.15)*	2.16(0.86-5.44)
Above primiparous	10	182	3.06(1.48-6.36) *	2.70(1.04-7.03) *
Previous abortions				
No	43	372	1	1
Yes	9	128	1.644(0.780-3.466)	1.23(0.54-2.79)
Type of abortion				
Spontaneous	37	441	1	1
Induced	15	59	0.33(0.17-0.64) *	0.76(0.26-2.24)
Planned pregnancy				
Yes	33	390	1	
No	19	110	0.49(0.27-0.90) *	1.19(0.44-3.23)

*P < 0.05 and confidence interval for the odds ratio does not include one in the interval

Table 7 Association of variables with long acting reversible contraceptive acceptance after pregnancy termination among women who received abortion care at Saint Paul's hospital from January to June 2015.

Long acting reversible contraceptive acceptance			COR (95%CI)	AOR (95%CI)
	No	Yes		
Age group (years)				
< 19	41	10	1	1
20-24	128	29	0.93(0.42-2.07)	2.12(0.75-5.00)
25-29	146	32	0.90(0.41-1.98)	1.82(0.62-5.33)
30-34	83	15	0.74(0.31-1.79)	1.20(0.36-4.01)
35-49	49	19	1.59(0.67-3.80)	2.26(0.67-7.60)
Residential area				
Rural	51	23	1	1
Urban (outside of Addis Ababa)	69	11	0.35(0.16-0.79) *	0.48(0.19-1.17)
Urban (in Addis Ababa)	327	71	0.48(0.28-0.84) *	0.80(0.32-1.65)
Level of education				
Not educated	118	35	1	1
Primary	176	42	0.81(0.49-1.33)	0.96(0.52-1.78)
Secondary	100	22	0.74(0.41-1.35)	0.77(0.37-1.62)
Tertiary	53	6	0.38(0.15-0.96) *	0.31(0.10-0.93) *
Religion				
Orthodox	316	81	1	1
Muslim	97	13	0.52(0.28-0.98) *	0.61(0.31-1.19)
Others	34	11	1.26(0.61-2.60)	1.66(0.76-3.64)
Occupation				
Unemployed	139	27	1	1
Student	18	10	2.86(1.19-6.87) *	4.62(1.50-14.22) *
Employed	152	37	1.25(0.73-2.17)	1.48(0.81-2.71)
Housewife	138	31	1.16(0.66-2.04)	1.36(0.73-2.54)
Marital status				
Single	64	27	1	1
Married	378	77	0.48(0.23-0.81) *	0.46(0.25-0.86) *
Divorced and widowed	5	1	0.47(0.05-4.25) *	0.43(0.04-4,13)
Parity				
Nulliparous	203	40	1	1
Primiparous	96	21	1.11(0.62-1.99)	1.73(0.88-3.38)
Above primiparous	148	44	1.51(0.94-2.43)	2.21(1.12-4.36) *
Previous abortions				
No	339	76	1	1
Yes	108	29	1.20(0.74-1.94)	1.52(0.90-2.56)
Type of abortion†				
Spontaneous	401	77	1	1
Induced	46	28	3.17(1.87-5.38) *	2.91(1.46-5.80) *
Ever use of modern family planning				
No	152	50	1	1
Yes	295	55	0.57(0.37-0.87) *	0.51(0.31-0.85) *

*P < 0.05 and confidence interval for the odds ratio does not include one in the interval

†Category excluded from logistic regression analysis

than research done in Addis Ababa in 2011 and in Gondar, Ethiopia in 2014 which showed contraceptive acceptance after abortion at 86% and 74.7% respectively[10, 12]. Post-abortion contraceptive service, which is provided free of charge at Saint Paul's hospital, has increased the availability for all women. The studies done in Addis Ababa and Gondar included clients from private health institution where there might have been fees for contraceptive. This might explain the increased uptake when compared with other studies done in Ethiopia. Prior research also indicated that clients are most likely to receive contraception when contraceptive counseling and supplies are provided at the time of abortion service[16, 17].

Women with higher parity had increased the odds of modern family planning methods acceptance. This might be explained by the fact that women with more children are likely to be motivated to use contraceptive. Married women were more likely to accept post-abortion contraceptive method than singles. This is similar finding to the study done in Gondar [(12)]. Single women might think that they are not at risk of pregnancy and chose not to use contraceptive, or might be reluctant to admit they are engaging in premarital sex. This study finding contradicted findings from previous research conducted in Addis Ababa[10].

The most popular contraceptive method was injectables in this study. From ever users of modern contraceptives, 41% were using it as the last contraceptive method prior to the abortion. This is in line with EDHS 2011 in which injectables (21%) was the most commonly used method[1], although the magnitude in this study was almost double the rate found in the DHS. Injectables were chosen by more than half of the women (56.2%) as their post -abortion contraceptive.

The study conducted in Gondar, Ethiopia found 57% of post-abortion clients intended to use the injectables which are similar findings to this study [(13)]. Nevertheless, this study findings were higher than the research done in Addis Ababa, Ethiopia and in Gabon which showed injectables acceptance after abortion of 18% and 14.6% respectively[10, 18].

The fact that many of the women (43%) adopted the same method post-abortion that they had been using previously indicates a missed opportunity to better meet women's contraceptive needs through family planning counseling. Women might be more comfortable with a contraceptive method with which they are familiar, which makes appropriate counseling even more important.

Long-acting reversible contraceptive methods were received by nearly 19% of the clients. This was higher than the studies done in Addis Ababa, Ghana and Gabon which were 3% (10), 15% (19) and 9.3% (18) respectively. But it was lower than the studies done in Gondar, Ethiopia and Australia

which showed acceptance rate of LARC at 27% and 27.4% respectively[13, 20]. Long-acting reversible contraceptive methods are effective in reducing unintended pregnancies and have been shown to reduce future unintended pregnancies and repeat abortions among abortion clients[21, 22]. Consequently, effective contraceptive methods need to be made available, particularly LARC owing to their greater efficacy in avoiding unintended pregnancies and induced abortions[23]. Increased advocacy for LARC by federal ministry of health, in addition to the availability for all women free of charge at Saint Paul's hospital, might be the reason behind the higher uptake compared to the studies in Addis Ababa, Ghana and Gabon.

Women with more parity or whose abortion had been induced were more than twice as likely to opt for a LARC method compared with those with lower parity or whose abortion was spontaneous. These two variables were associated with choosing a LARC method in the multiple regression analysis. Their motivation to ensure that they did not get pregnant again in the immediate future might be much greater than those women who had lower parity and those who had a spontaneous abortion. A similar association was found in the study done in a principal maternity hospital in Gabon[18].

There was also higher uptake of LARC in students than in women with other occupations in the multiple regression analysis. There was a similar finding in Gabon [(18)]. This might be explained by the fact that those who aspire to a better education are more motivated to use an effective contraceptive method. It was interesting to mention here that those women who achieved higher level of education (tertiary level) have lower uptake of LARC than women who are not educated.

Married women have decreased odds of uptake of LARC than those who are single.

This might be due to the fact that most of pregnancies in married women were intended pregnancies that ended up with spontaneous abortion and they might need to conceive earlier than singles.

Previous ever use of family planning method before the abortion decreased acceptance of LARC by 50%. This could be explained by the fact that most of these women left with the same contraceptive method they had been using prior to the abortion and the most common previously used contraceptive was injectables. Ensuring that women have high quality contraceptive counseling that educates them about all available methods, not only the ones they are familiar and have experience with, might increase the number of women who adopt LARC methods.

The study's largest strength lies in the fact that the researcher had a wealth of data about each woman which allowed us to investigate different types of relationships, control for previously established confounders and stratify on important factors.

Contraceptive counseling was given for all women as part of post-abortion care. All methods (OCP, condom, injectables, sterilization, implant and IUD) were available for all women during the study period and were provided for free before discharge. Despite these strengths, the study did have limitations. Women were not followed prospectively once they received their method post-abortion, so we do not know the patterns of use or continuation. Further follow-up study is needed to know whether or not they continued use of contraceptive method after discharge.

In conclusion, the post abortion contraceptive acceptance rate was higher than other studies done in Ethiopia. Higher parity, being married and a housewife were independent predictors of modern contraceptive method acceptance. Induced abortion, higher parity and being student were significant predictors of adoption of LARC.

While abortion care offers an opportunity to improve contraceptive uptake, there should be increased advocacy and multipronged activity by the hospital and federal ministry of health to further increase the acceptance of LARC post abortion. Increasing the availability, promoting access, and provision of modern and long-acting contraceptives could reduce the risk of unwanted pregnancies and potentially unsafe abortion. Further, a research which assesses follow-up discontinuation rates of contraceptive methods after discharge of the clients is an important next step.

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Competing interests

The authors report no conflicts of interest in this work.

Corresponding author:

Matiyas Asrat

MD, Assistant Professor of obstetrics and gynecology at Saint Paul's hospital Millennium Medical College, Addis Ababa, Ethiopia

Email: mat_asr@yahoo.com

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FEASIBILITY OF WIGGLESWORTH PATHOPHYSIOLOGICAL CLASSIFICATION FOR PERINATAL MORTALITY IN SAINT PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE, ETHIOPIA

Malede B.[1], MD, MPH; Tadesse Urgie[1], MD
[1]Saint Paul's Hospital Millennium medical college (SPHMMC), Department of Obstetrics and genecology, Addis Ababa, Ethiopia

ABSTRACT

BACKGROUND: Perinatal mortality of a country is often used as a measure of the adequacy of obstetric and neonatal services. Several classification systems have been in use with their own advantages and disadvantages. Studies have reported Wigglesworth classification to be simple and reproducible. There are no reports regarding its use and feasibility in Ethiopia.

OBJECTIVE: The aim of this study was to review perinatal deaths at Saint Paul's hospital millennium medical college and see the feasibility of Wigglesworth classification.

METHODS: A one-year review of perinatal deaths at Saint Paul's Hospital millennium medical college from January 2014 to December 2014 was conducted. The deaths were analyzed using Wigglesworth classification.

RESULT: Perinatal mortality rate was found to be 70.1/1000 live births. Majority of the perinatal mortality were still births (72%). According to Wigglesworth classification of the perinatal deaths 47% were Macerated still births, 25.7% perinatal asphyxia. Other causes mortality was; lethal congenital malformations (10%), prematurity (10.7%) and septicemia (5.7%) were mortality. Wigglesworth classification was found to be feasible at SPHMMC.

CONCLUSION Macerated stillbirths and perinatal mortality were leading causes of perinatal mortality at SPHMMC. Wigglesworth classification is a simple and feasible system to be applied in Ethiopian hospitals.

Key words: Perinatal mortality, Wigglesworth classification, Ethiopia

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INTRODUCTION

According to WHO estimate greater than 7.8 million perinatal deaths happen worldwide of which more than 98 percent in developing countries[1]. The still birth rate in Africa is largely unknown because of lack of reports. Ethiopia has showed a huge reduction on infant mortality in the past decade. But perinatal mortality remains high. Ethiopian health and Demographic surveillance reported a slow reduction on perintal mortality from 46/100 live births in 2001 to 29 in 2016[2].

The perinatal mortality rate of a country is often used as a measure of the adequacy of obstetric and neonatal services. Countries use various methods to examine the problem and to suggest recommendations for the improvement of perinatal care. Any attempt to analyze perinatal mortality data usually faces the problem of selecting or developing a classification system for the causes of deaths. Classification systems vary with the specialty of the individual who proposes them. Several classification systems have been proposed by obstetricians, neonatologists/ pediatricians, perinatal pathologists and epidemiologists[3].

Each classification has its strengths and weaknesses. When selecting a classification system, it is important to understand the aims. The aim of any classification of perinatal deaths should be to derive strategies for the prevention of perinatal mortality. Obstetric classifications concentrate on maternal factors and take little account of the fetal/neonatal clinical pathological processes. Pathological classifications depend heavily on the availability of autopsy services. It is difficult to obtain in countries like Ethiopia because of cultural and religious beliefs.

Classification of perinatal deaths is accepted as a crucial step towards the goal of reducing the numbers of stillborn infants. However, the use of suboptimal classification systems may lead to a loss of important information and contributes to a high proportion of unexplained deaths. These deaths may be interpreted as unavoidable thereby diminishing the potential of immediate and longer-term prevention strategies including research to address knowledge gaps[4].

Aberdeen's obstetric classification is widely used in Ethiopia but has limitation of classifying a high number of unexplained causes. It has limitation of detecting fetal pathologies. Wigglesworth classification is found to be reported simple, reproducible, and can be used without autopsy. This classification system has been reported to be feasible in tertiary and district hospitals in Bangladesh and Malaysia[3, 4].

Wigglesworth classification system classifies the perinatal deaths as: normal macerated, congenital malformation, immaturity, perinatal asphyxia, and others. This study was conducted with the aim of analyzing perinatal mortality using Wigglesworth classification and assesses the feasibility of using this classification in a tertiary care hospital setting.

SUBJECTS AND METHOD

A one-year retrospective study was conducted by analyzing births at Saint Paul's Hospital millennium medical college (SPHMMC) over a period between January 2014 and December 2014.

All births and perinatal deaths in the study period were recorded from labor ward log books. Information on weight, sex, gestational age (from last menstrual period), mode of delivery, presence of any lethal congenital anomalies, and type of stillbirths (macerated or fresh) were recorded from the charts. Early neonatal deaths, which died within seven days of delivery, were identified from record books in neonatal intensive care unit (NICU).

Data was entered and analyzed using computer SPSS software version 15.0. The perinatal deaths were analyzed according to Wigglesworth classification. The stillbirth rate, early neonatal mortality rate, perinatal mortality rate was calculated manually. Ethical clearance obtained from SPHMMC Institutional Review Board (IRB).

Operational Definitions

⇒Stillbirth is death of fetus > 28 weeks of gestation or > 1000gram.

⇒Early neonatal deaths, death of a newborn in the first seven days of life (0-6 days).

⇒Perinatal mortality rate — is the sum of late of birth divided by the sum of live births plus late fetal deaths and expressed per 1000 live births plus late fetal deaths.

RESULT:

A total of 4,890 births were reported in the study period at Saint Paul's hospital Millennium medical college. A total of 347 perinatal deaths reported making perinatal mortality rate to be 70.9/1000 live births. Among the perinatal deaths 251 were still-births and 96 early neonatal deaths. The still birth rate was 51/1000 live births. It was possible to get only to trace 280 charts for review and the chart retrieval rate was 80 %. The male to female ratio is 1.5:1. Twenty-three percent of the deaths have been delivered by cesarean section and three percent by destructive delivery.

Majority (66.4%) of perinatal deaths occurred among mothers who were referred from outside Addis Ababa. Most mothers were booked for ANC (86%) and the mean maternal age was 26 years. The mean gestational age was 36 weeks. Majority of the deaths happened in the low birth weight. Seventy-eight percent of patients had labor at admission and 15% had malpresentations. Of which 12 percent were breech and three percent other forms of mal-presentations (Table 1).

Perinatal deaths were analyzed using Wigglesworth classification method. Accordingly, majority (47.5%) were macerated still births. Perinatal asphyxia contributed to 25.7 %, of the deaths. Lethal congenital malformations (10.3%), prematurity (10.7%) and septicemia (5%) were other causes of mortality (Table 2).

Table 1 Distribution of Perinatal deaths in SPHMMC by maternal demographic and obstetric factors, 2015

Variable	Number	%
Maternal age		
< 20	46	16.4
20 to 25	96	34.3
26 to 30	102	36.4
31 to 35	24	8.6
>35	12	4.3
Address		
Addis Ababa	94	33.6
Outside Addis	186	66.4
Parity		
Prim gravid	182	65
Multiparous	98	35
Booking status		
Booked	241	86.1
Not Booked	39	13.9
Stage of labor		
first stage	88	44
second stage	48	24
Prelabour	64	32
Number of gestations		
singleton	262	94
twin	18	6
Sex		
Male	170	60.7
Female	110	39.3
Mode of delivery		
vaginal route	196	70
Cesarean section	65	23.2
destructive delivery	19	6.8
Presentation		
Vertex	192	68.6
Breech	34	12.1
others	9	3.2
unknown	45	16.1
Birth weight		
1000 to 1499 grams	66	23.4
1500 to 2499 gram	71	25.4
2500 to 3999 grams	138	49.3
> 4000 grams	5	1.8

The common causes of early neonatal deaths were perinatal asphyxia, respiratory distress and sepsis. Seventy-five percent of them had hypothermia. The feasibility assessment of Wigglesworth classification revealed that, most variables are documented on the logbook or patient chart and it as feasible to make use of it.

Table 2 Wigglesworth path physiologic classification of perinatal deaths, SPHMMC, 2014

Causes	No.	%
Macerated still birth (unexplained)	133	47.5
Perinatal asphyxia	72	25.7
Congenital malformations	29	10.4
prematurity	30	10.7
septicemia	16	5.7
Total	280	100

DISCUSSION

The Perinatal mortality (PNM) at Saint Paul's Hospital (SPH) was found to be 70.1/1000 live births. This is higher than the national estimate which is 37/1000 live births[6]. But lower than reports from teaching hospitals in Tanzania and India, 124 and 142.5/1000 live births respectively. The proportion of still births is 72% which is similar to reports from other teaching hospitals. Saint Paul's Hospital Millennium medical college is a referral centre, where complicated cases from peripheral units.

According to the Wigglesworth's classification, Perinatal asphyxia and macerated still births were lead-

Table 3 Perinatal mortality Adjusted by maternal age, birth weight, parity and number of gestations, SPHMMC 2015

Factor	deaths	total births	PMR /1000 live births
Birth weight in gram			
1000 to 1499	66	196	336.7
1500 to 2499	71	978	72.6
2500 to 3999	138	3521	39.2
4000	5	147	34.
Maternal age			
< 20	46	235	195.7
20 to 25	96	1516	63.3
26 to 30	102	1907	53.5
31 to 35	24	880	27.3
>35	12	333	36
Parity			
Prim gravid	182	2053	88.6
Multiparous	98	2837	34.5
Number of gestations			
singleton	262	4572	57.3
twin	18	318	56.6

ing causes of mortality which contribute to two third of perinatal mortality. This may be due to inadequate labor monitoring at referring units and delay in reaching to SPHMMC. Most of mothers referred from outside Addis Ababa. Majority of the perinatal deaths happened among mothers who were booked for antenatal care (ANC) at least once. The quality of care given might be inadequate the primary care units.

Mortality because of prematurity was higher compared to reports from India. Effective interventions like; reducing preterm deliveries, antenatal steroid, use of surfactant and ventilators in the NICU are essential for reducing mortality (6-12).

Sepsis was also another important problem (5%). Infection prevention strategies like hand washing, reducing NICU traffic, disposable equipment's and using effective antibiotics are helpful.

Perinatal asphyxia and macerated still births were leading causes of mortality. Improved obstetrics care is needed. Wigglesworth path physiological classification is feasible in Ethiopian health system. It helped reducing the proportion of perinatal deaths classified as unexplained, a problem commonly faced by Aberdeen's classification. Wigglesworth classification is advantageous as it is simple, reproducible, and used without need for autopsy. It also provides cause specific comparisons between different nations and centers.

CONCLUSION AND RECOMMENDATION

Perinatal asphyxia and macerated still births are leading causes of perinatal mortality at SPHMMC. Wigglesworth classification is a feasible method for classifying perinatal deaths.

Wigglesworth classification can be applied in Ethiopian health system with better benefits for better perinatal care. It can be used for audit services in

primary and tertiary hospitals. Better labor monitoring and effective interventions for premature births and sepsis are crucial.

CONFLICT OF INTEREST

The researchers declare that there is no conflict of interest.

Corresponding Author

Malede B., MD

Saint Paul's Hospital Millennium medical college (SPHMMC), Department of Obstetrics and genecology, Addis Ababa, Ethiopia

maledebirara@yahoo.co.uk

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A ONE-YEAR REVIEW OF PELVIC ORGAN PROLAPSE AT ST. PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE, ADDIS ABABA ETHIOPIA

Tesfaye Hurissa, MD[1]; Delayehu Bekele, MD, MPH[1]

ABSTRACT

BACKGROUND: Pelvic organ prolapse is the descent of anterior vaginal wall, posterior vaginal wall, uterus and after hysterectomy the apex of the vagina through the vaginal canal. Different risk factors are incriminated as a cause including multi parity, heavy lifting and hypo estrogenic state like menopause.

OBJECTIVE: To review the sociodemographic data, clinical profile and management of patients admitted with the diagnosis of pelvic organ prolapse at St Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia between December 1 2015 and November 30 2016.

METHOD: A facility based descriptive cross-sectional study was conducted. A structured questionnaire was used to collect sociodemographic characteristics, clinical profile, type of operation done and acute complication of the surgery. Data was entered and analyzed using SPSS statistical package version 16.

RESULT: A total of seventy-four patients with POP were admitted and included in the study. Majority of patients with POP operated at St Paul's hospital millennium medical college are Gurage in ethnicity 42 (57%), postmenopausal 48 (63.9%) and grandmultipara 44(59.4%). Vaginal hysterectomy with anterior colporrhaphy is the commonest surgical procedure done. The contribution of POP out of the major gynecologic operations done in SPHMMC during the study period was 15 %.

CONCLUSIONS: Pelvic organ prolapse contributes a significant percentage of major gynecologic procedure and more common among Gurage ethnicity. Further study in the more prevalent area to identify any peculiar risk factors and preventive strategies of the known risk factors is of great importance.

KEY WORDS: Pelvic organ prolapse, vaginal hysterectomy, Uterovaginal prolapsed

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INTRODUCTION

Pelvic organ prolapse (POP) is the descent of anterior vaginal wall, posterior vaginal wall, uterus and, the apex of the vagina after hysterectomy, through the vaginal canal[1]. It is due to defects in the support structures of the uterus and vagina namely the uterosacral ligaments, the cardinal ligaments complex and connective tissue of the urogenital membrane[2].

A study done at Gondar University and Gandhi Memorial hospitals have showed that POP accounted for 19.9% and 17.2 % of all gynecologic operations respectively[3]. In another cross-sectional study conducted in Ejura-Sekyidumasi, Ashanti region in rural Ghana showed that POP was observed in 21 (12.1%) women[4]. Community based reproductive health survey at was Gambia showed that uterovaginal prolapse (UVP) was present in 46% of the women[5]. A retrospective review of all cases of genital prolapse admitted and operated in the university of Port Harcourt Nigeria teaching hospital showed that genital prolapse accounted for 37.5 per 1000 gynecological admission[6]. According to a population-based survey carried out by the United Nations Population Fund, World Health Organization and the Institute of Medicine at Tribhuvan University in 2006, more than 600,000 Nepali women suffer from some form of uterine prolapse. Of these women, nearly 200,000 are in immediate need of surgery[7].

A variety of surgical procedures has been used as a standard of care for patients with POP. The major operations performed for patients with UVP in JUSH during the study period were vaginal hysterectomy with anterior colporrhaphy and posterior colpoperinorrhaphy, 76.7% and 14.3%, respectively. Whereas the remaining had vaginal hysterectomy with sacrospinous fixation and manchester operation[8]. In university of Nigeria Teaching Hospital, Enugu - Nigeria 44% of the women had vaginal hysterectomy with pelvic floor repair. Manchester repair was done for 2% of them while 12% had pessary insertion[9].

This study was conducted to review the sociodemographic data, clinical profile and management of patients admitted with the diagnosis of pelvic organ prolapse at St Paul's Hospital Millennium Medical College (SPHMMC), Addis Ababa, Ethiopia.

RESULTS

Seventy-six patients were initially enrolled during the study period between December 1 2015 and November 30 2016. But two of the patients had been discharged without being operated and has been excluded from the study. All 74 patients had a complete response rate and have been investigated.

The contribution of POP out of the major gynecologic operations done in SPHMMC during the study period was 15%. More than half of the study population were Gurage in ethnicity accounting for 56.8%, followed by Oromo (23 %),

Table 1- Sociodemographic characteristics of patients with POP operated at SPHMMC, Addis Ababa, Ethiopia 2016

Category		No.	%
Age (years)	≥ 40	55	74.3
	< 40	19	25.7
Marital status	Married	47	63.5
	Widowed	22	29.7
	Single	3	4.1
	Divorced	2	2.7
Place of residency	Out of Addis	54	73
	Addis	20	27
Menstrual status	Postmenopausal	48	63.9
	Premenopausal	26	35.1
Religion	Orthodox Christian	40	54.1
	Muslim	30	40.5
	Protestant	4	5.4
Occupation	House wife	45	60.8
	Farmer	20	27.0
	Employed	5	6.8
	Merchant	4	5.4
Educational status	Illiterate	65	87.8
	Read and write	5	6.8
	Grade 1-8	3	4.1
	Grade 9-12	1	1.4
Parity	Para 1	3	21.4
	Para 2-4	26	35.1
	Para 5 and above	44	59.4

Amhara (17.6%), and Tigray (1.4 %).

Majority of the patients were from outside Addis (73 %) and have parity of five or more. The mean age of patient with POP is 48.3 (± 12.5) years old with a range of 29-80 years. Farmers and house wives account the majority of the cases each accounting 27%, and 60.8 % respectively. The majority of the patients 65 (87.8%) are illiterate and never attended school as shown in Table 1.

All patients with POP in SPHMMC came with presenting complaint of mass per vagina. Some of the additional symptoms were urinary complaint (14.9 %), and bowel complaint (1%). The mean duration of symptoms was 2.5 (± 3) years (range 2 - 15years).

Sixty-four (86.5%) of them had no evidence of urinary tract infection up on urine analysis, while 10 (13.5%) of them had evidence of urinary tract infection like bacteria, leucocytes or nitrites.

Pap smear was done for 49 (66.2%) of the patients. Only one patient (1.4%) had positive result for Pap smear which was cervical intraepithelial neoplasia (CIN) I, while 48 (64.9%) of them had negative Pap smear result. Thirty-eight (51.4%) of the patients had stage three POP, 24 (32.4%) had stage four, while 11(14.9%) had stage two POP. One patient had stage one POP with cervical elongation. The pre-operative and post-operative haematocrit levels were 42.3 (± 3.2) with range 29.4 - 51 and 35.5

(±3.6) with range 21-42, respectively. The pre-operative and post-operative stays for the study group were 5.3 (± 3.2 days) with range 1 - 23 and 4.1 (± 1.3) days with range 2 -12, respectively.

Vaginal hysterectomy is done for all patients. In addition to vaginal hysterectomy,the major operations performed during the study period were, vaginal hysterectomy with anterior colporrhaphy (50%). For two patients, partial colpoclesis was done. Both were postmenopausal and not sexually active. For one patient with stage one POP and cervical elongation, tracehlectomy was done. The average operation time for the surgeries was 86.55 minutes (range 50-300 minutes). None of the patients had significant postoperative complications. Two patients had developed significant anemia (hematocrit of 21% and 24%) and no death was reported during the study period.

DISCUSSION

The study revealed that uterine prolapse surgeries account for 15% of major gynecologic surgeries which is consistent with other studies. At Gondar POP accounted for 19.9% of all gynecologic operations while in Gandhi it accounts 17.2%.

The ethnic distribution shows, more than half of the patients are Guraghe, 56.8%, followed by Oromo, 23% and Amharas, 17.6%. The study in Gandhi Hospital showed that Guraghes account for 33.3%, 32.2 % were Amharas, 27.2 % were Oromo. A recent case control study in Wolaita Sodo university referral teaching hospital also revealed that, those patients with POP are more highly likely to involve in Kocho (traditional diet in Gurage region) making, which is physically demanding job. This could explain the similarity in a study at SPHMMC and Gandhi Hospital[10]. Unlike the two, the study in Jimma showed that 72.9% of the patients who were operated for UVP in JUSH were Oromo, and the others accounts only a quarter. This might be due to the difference in Geographical location.

The mean age of patients with POP in our study was 48.3 (± 12.5) years old with a range of 29-80 years. Relatively older women are affected than the patients studied in Jimma, Gondar or Ghandi which is 42.43 (± 10.4), 38.09 (±11.52) and 42.17 (±13.6) years respectively[3,8]. It is also similar to the study done in, Ghana which showed that the mean age to be 45.5 (± 18.5) years[4]. This marked increase in the magnitude of POP among old age patients is associated with hypo estrogenic state which will result in loss of connective tissues which serve as a pelvic support.

All the studies done in Gondar, Gandhi and Jimma showed that majority of patients with UVP were of parity greater than five which is consistent with this study. There is a clear association between increased parity and risk of prolapse and as described on pelvic organ support study, the risk of POP increased 1.2 times with each vaginal delivery

[11]. In this study, the maximum duration of labor is 96 hours which is similar with study done in JUSH which showed to be more than 24 hours in 47.3% of the cases[8].

Seventy three percent of patients in this study were from outside Addis Ababa. According to the study done by Lukman Y, of the 125 housewives from the Gondar group, 92.2% were from the rural area where as the Gandhi memorial group revealed that 90.5% (out of 158 subjects) were rural housewives. The study done in JUSH showed that 80.6% live outside Jimma city. This is explained with low access of health service by the rural population and lack of awareness on important risk factors and preventive measures[3, 8].

The study showed that farmers and house wives account the majority of the cases each accounting 27%, and 60.8 % respectively, while 5.4% are merchants, and 6.8% are employed. This study has similarity with the study done in Jimma in which case, farmers, house wives, merchants, and the employed account for 68.2%, 25.6%, 4.7% and 1.6%, respectively. There is also similar finding in the study in Gondar and Gandhi. The farmers and house wife of farmers are highly likely to involve in highly demanding activities which will eventually leads to POP. Illiteracy and poor economic status was found to be much common in these patients which in turn contribute to poor nutrition which is associated with uterine prolapse.

The study showed that POP is more common in older postmenopausal women, which is related to the hypo estrogenic state associated with menopause. There are also significant number of young patients which can be attributed to the young age of marriage and child bearing which is particular to Ethiopia when compared to other studies. There was one patient in our study who is young and nulliparous without any identifiable risk, demonstrating that there could be some genetic component involved in POP.

In conclusion, Pelvic organ prolapse contributes to a significant percentage among all gynecologic surgeries at SPHMMC. Among the various sociodemographic characteristics, the burden is much common among multiparas, postmenopausal, Illiterates and those with Gurage ethnicity. Though not common, POP also occurs in young, nulliparous women. All patients has undergone vaginal hysterectomy and suspension surgeries should also be part of the standard treatment for patients with POP at SPHMMC. Health awareness on the risk factors including multiparity, prolonged labor and physically demanding works is important as one method of reducing the burden. Further study on areas where the burden is high, particularly in Gurage region, is mandatory for any modifiable factor. Long term follow-up of the different surgical techniques for any possible long-term complication is also important to consider.

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Corresponding address:

Tesfaye Hurissa (MD)

Department of Obstetrics and Gynecology, Saint Paul's Hospital Millennium Medical College

E-mail: *tesfayehurisa50@gmail.com*

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A CASE OF RECURRENT PERICLITORAL ABSCESS

Tadios Asres MD[1], DTM & H; Matiyas Asrat[1], MD; Lemi Belay[1], MD
[1]Department of Obstetrics and Gynecology, St Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia

ABSTRACT

Periclitoral abscess is a rare entity, with publication limited to case reports. The researchers report a case of spontaneous periclitoral abscess in 20 years old patient which was treated with intravenous antibiotics, later underwent spontaneous drainage and marsupialization was done.

KEY WORDS: Abscess, clitoris, periclitoral

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INTRODUCTION

Periclitoral abscess is a rare gynecological condition with few cases reported. There is no enough available evidence for treatment, except case reports. Treatment is based on personal experience.

CASE REPORT

A 20-year-old patient (nulligravid) presented with complaint genital swelling and pain of four days duration. She had two previous similar episodes prior to current presentation. The first was six months back and subsided after she took oral Amoxicillin. The second was two months prior to current presentation and improved after taking unspecified antibiotics. She was on monogamous sexual relationship with her boyfriend. She was not circumcised.

The lump was tender and fluctuant. There was no ulceration and the rest of the genital structures appeared normal. She was started on clindamycin. After two days of antibiotics the abscess drained spontaneously. Marsupialization was done on the same day. Gram stain of the abscess showed gram positive cocci and culture showed Escherichia coli. The patient was discharged the same day. There was no recurrence after one month follow up.

DISCUSSION

Most of the cases with periclitoral abscess are patients who had been subjected to genital mutilation procedures [1]. Spontaneous periclitoral abscess is a rare entity, with publication limited to a few case reports. In most of the reported cases, the etiology for the development of such spontaneous abscess was unknown. Several microorganisms have been isolated in some of the published cases: coagulase-positive Staphylococcus, Streptococcus bovis, Diptheriae species, and Bacteroides species[2, 3].

There is no established optimal management for periclitoral abscesses. In all of the case reports the choice of management was subjective and based on physician personal experience and convenience. Some patients were treated with expectant management until spontaneous drainage or resolution[4, 5]. The other options of treatment include local incision or marsupialization as in our case[2, 6]. Some of the cases were treated with local excision[7, 8].

Figure 1: Clitoral Abscess

Almost all of the cases presented recurrences in the following months or years after the first episode, which were irrespective to the initial method of treatment. These findings do not lead to any conclusion that favors use of antibiotics, expectant or surgical management as a proper treatment of the initial episode. As for recurrent episodes, it seems to be sensible to offer either marsupilization or excision of the abscess cavity as treatment options[6].

In conclusion, spontaneous periclitoral abscess is a rare entity with no established standard management. Further studies are needed to understand clinical features of this rare disorder and define the best management options.

Corresponding Author:

Tadios Asres, MD

Department of Obstetrics and Gynecology, St Paul's Hospital Millennium Medical College, Addis Ababa,
Ethiopia
tadiosm@gmail.com

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CASE REPORT: SPONTANEOUS FUNDAL UTERINE RUPTURE IN A GRAND MULTIPARA BEFORE ONSET OF LABOR

Balkachew Nigatu[1], MD, Tizita Abraham[1], MD, Geremew Negash[1], MD
[1]Department of Obstetrics and Gynecology, St Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia

ABSTRACT

Uterine rupture is an obstetric emergency and which is associated with high maternal and fetal morbidity and mortality. It commonly occurs in uterus with one or more previous scar but is rare in unscarred uterus and especially without labor. The researcher presents a case of fundal uterine rapture in a 35 years old grand multipara who present with abdominal pain of 24 hours' duration. But she has no history of pushing down pain (labor) and no history of trauma. Intraoperative finding showed fundal uterine rupture with a freshly dead baby free in the peritoneal cavity and total abdominal hysterectomy was done.

KEYWORD: Uterine fundus, rupture

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INTRODUCTION

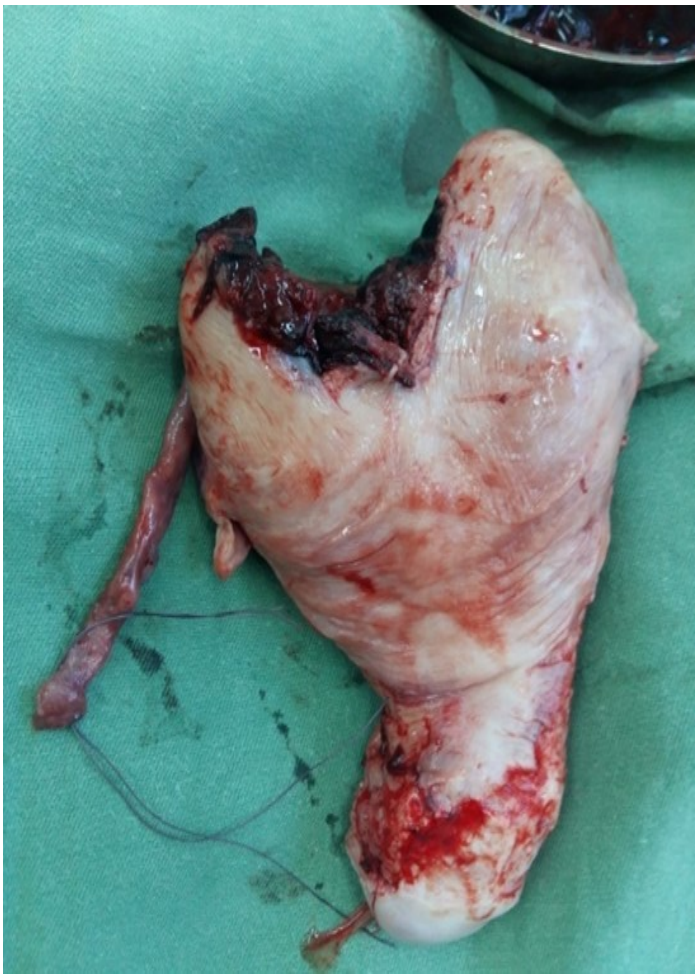
Uterine rupture is an obstetric catastrophe often complicated with maternal and fetal morbidity and mortality[1, 2, 3]. Uterine rupture is a common complication of pregnancy in developing countries. However, it is very rare in developed countries[4, 5]. Reported incidences averaging less than 0.4 in developed and are between 2.4 to 8.9 per 1000 deliveries in the low resource setting[2]. The major antecedent factors are poverty, ignorance, illiteracy, traditional practices, high parity, a lack of antenatal care, unsupervised delivery, poor infrastructure, delivery outside of a health institution, cephalo-pelvic disproportion, and the injudicious use of oxytocin.

CASE REPORT

The researcher presents a 35years old G7P6, who does not know her LNMP but claimed to be nine months amenorrhoic present with abdominal pain of 24 hours duration. In association she had nausea and vomiting of the same duration. She had one episodes of syncopal attack. Otherwise she had no pushing down pain (labor), vaginal bleeding, or passage of liquor. No history of fever, chills or rigor. No history of fall down injury or trauma to the abdomen. She had no ANC follow up and came referred from West Shoa, Ormia region close to 150kms away from St Paul's Hospital Millennium Medical College. All previous deliveries were vaginal and at home. The first five are alive but the last one was a still birth due to cause unknown to the family.

On physical evaluation, she was fully conscious and grossly pale. Her pulse rate was 128 beats per minute and blood pressure – 70/40mmHg. She had paper white conjunctivae. Abdominal examination revealed tense and irregularly enlarged abdomen with mild diffuse direct and rebound tenderness, and positive sign of fluid collection. The fetal parts were easily felt just beneath the anterior abdominal wall. The lie and presentation were difficult to ascertain. Fetal heart sound was absent. The cervix was posterior, uneffaced and admits tip of a finger. With the assessment of uterine rupture, she had emergency laparotomy with the intraoperative finding of a freshly dead female fetus weighing 2,300gm, extruded through the fundus of the uterus and floating inside the peritoneal cavity. There was complete disruption of the fundus. Placenta was easily removed with traction from its posterior wall implantation site. Hemoperitoneum was about 3.5L. Total abdominal hysterectomy was performed. She was transfused with two units of whole blood intraoperative and three units postoperative. Then, she had a smooth postoperative recovery period and was discharged home on the seventh day with therapeutic dose of iron. See (Figures 1&2) the intra-operative finding.

Figures 1: Intra-operative Finding



Figures 2: Intra-operative Finding

DISCUSSION

Patients with a ruptured uterus tend to be multiparous and advanced maternal age as was the case in this index patient. The high parity is recognized as major risk factor of spontaneous uterine rupture in unscarred uterus[6]. Other etiological factors classically recognized as contributing to a rupture of unscarred uterus are as follow. Those are obstetric maneuvers, malpresentation especially transverse fetal presentation, cephalopelvic disproportion, excessive uterine expressions, abnormal placentation (placenta percreta mainly), trauma due to uterine curettage, and uterine abnormalities [5, 6, & 7]. In some cases, the rupture of gravid uterus has no obvious cause. In their series of 40 uterine ruptures, Schrinsky and Benson found ten spontaneous ruptures without any predisposing factors[8]. The case presented here emphasizes the possibility of uterine rupture, even in women with unscarred uterus and before labor. The most likely predisposing factor in this case was high parity.

Uterine rupture of an unscarred uterus is associated with significant morbidity and mortality. Schrinsky and Benson, in their study, found a maternal and fetal mortality rate of 20.8% and 64.6%, respectively[8].

Maternal manifestations are variable. Uterine rupture should always be strongly considered if constant abdominal pain and signs of intra-abdominal hemorrhage are present. Vaginal bleeding is not a cardinal symptom, as it may be modest, despite major intra-abdominal hemorrhage. However, case reports and series indicate that pain may not be present in sufficient intensity, character, or location to suggest uterine rupture[9-12], and pain may be partially or completely masked by regional analgesia. Furthermore, although hemorrhage is common, the signs and symptoms of intra-abdominal bleeding in cases of uterine rupture, especially those cases not associated with prior surgery, may be subtle[13]. Other potential clinical manifestations include maternal tachycardia, hypotension ranging from subtle to severe (hypovolemic shock), cessation of uterine contractions, loss of station of the fetal presenting part, uterine tenderness, and change in uterine shape.

CONCLUSION

Uterine rupture may occur unnoticed, particularly in unscarred uterus. High index of suspicion should be entertained in this group of patients.

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CONFLICT OF INTEREST:

None

Corresponding Author:

Dr. Balkachew Nega

balkewnega@gmail.com

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