

## Research Article

# Demographics and Sociocultural Characteristics of Women Seeking Cervical Cancer Screening in Liberia

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Received: May 02, 2018; Accepted: June 15, 2018;

Published: June 22, 2018

## Abstract

**Background:** The civil wars that occurred in Liberia between 1989 and 2003 resulted in the destruction of all health and demographic data. As a precursor to the implementation of reproductive health care in Liberia, and as part of an HPV screening program, a survey was conducted in the capital city of Monrovia for all women who participated.

**Objective:** To provide demographic on socio-cultural and sexual practices of the post war Liberian woman and relate these findings to the reproductive healthcare needs of Liberian women during the period 2010-2013. To corroborate newly acquired countrywide demographic data.

**Methods:** Women were recruited for this study through radio and television advertisement, distribution of flyers, and announcements in churches and mosques throughout Monrovia, Liberia. All participants signed informed consent and a questionnaire was completed through one-on-one interviews.

**Results:** Basic demographic data including education and employment was collected, as was information about sociocultural and sexual practices, reproductive health practices, and interpersonal partner violence and rape.

**Conclusions:** Information obtained from this study provides insight into the socio-cultural and sexual practices as it relates to current reproductive health care in Liberia.

**Contribution:** This is the first comprehensive data focusing on Liberian women. Information is available to clinical researchers for future reproductive health projects in Liberia.

**Keywords:** Reproductive health; Socio-cultural practices; Demographics; Qualitative surveys; One-on-one interviews; Cervical cancer screening

## Abbreviations

HPV: Human Papilloma Virus; STI: Sexually Transmitted Infections; SPSS: Statistical Package for the Social Sciences; IUD: Intra Uterine Device; IPV: Intimate Partner Violence; IRB: International Review Board; HIV: Human Immunodeficiency Virus; UNICEF: United Nations International Children's Emergency Fund

## Introduction

Women in Liberia have played a pivotal role in its nation's history. During its 14-year civil and rebel wars, women's organizations in Liberia were persistent in demanding a resolution between the two sides and called for the end of the war [1]. Since the war ended in 2003, Liberia has entered a period of peace and rebuilding. Data from the World Bank indicate that the women of Liberia make up a large part of the work force. This study found that women make up 50% of the agricultural labor force, they produce 60% of all agricultural products and about 69% are entrepreneurs [2-4]. In a step forward, Liberia elected Ellen Johnson Sirleafas President of Liberia in 2007. Since her induction she has vowed to put women's agendas at the forefront of political discussions. Little data is recorded about the socio-cultural and sexual practices of women in Liberia [5].

## Data and Methods

In order to get a better understanding of the modern day Liberian woman, a quantitative study was undertaken. The study consisted of administering a questionnaire that addressed basic demographic information, sexual and life style history, as well as socio-cultural and sexual practices. This cross-sectional study was done in conjunction with the first pilot STI and cervical cancer-screening program offered in Liberia. Trained nurses administered questionnaires to the patients and recorded their responses.

### Study site

Liberia is a country in West Africa with a population of 4,564,717 million people. Fifty-two percent (2,407,532 Million) of the population is in the age range 15-64 years, and 1,214,580 million of this age group are female [6]. The country is divided into 15 counties. Population varies by counties with Grand Kru having the smallest population of 57,913 people and Montserrado having the largest with just over 1.1 million people [7]. Questionnaires were administered in Montserrado County at the Hope for Women International Health Clinic located in Paynesville.

## Participants

Inclusion criteria for this study were a) females with a minimum age of 16 years old, b) sexually active (or previously active), c) not pregnant, d) no known diagnosis or treatment for cervical carcinoma. Participants for this study were recruited through distribution of fliers, radio and television announcements, and presentations at local churches and mosques. All volunteers under the age of 18 participated with consent of their guardian.

## Data collection and analysis

Nurses who participated in data collection were previously trained in taking informed consents and data collection, following the Field Training Guidelines published by John Hopkins School of Public Health [8]. Study participants were given numbers to preserve confidentiality. Completed questionnaires were entered into an Excel spread sheet. Data was later imported into SPSS for analysis. All documents were kept in a locked filing cabinet to which only the principal investigator had access.

## Results

978 women signed informed consents to participate in the study.

### Demographics

Ages ranged from 16-85 years old. 54 participants (5.8 %) did not know their age due to lost birth certificates, birth during the war, or birth at a refugee camp. Among the 924 participants who knew their age, the average age was 39.9 years (Table 1). Place of Birth: Of the 873 women who responded, 90.2% of participants were born in Liberia (N=848).

County of Residence: 63.1% of participants resided in Montserrado County (N=591). Nine other counties were represented; the number of participants from other counties ranged from 1-6.9%. 924 women responded. Religion: Of the 897 women, who responded, 92.6% of participants were Christian and 3.8% were Muslim. 2.98% of patients did not respond.

### Education and employment

Education: Approximately one third of participants, 32.6%, completed high school, while 17.1% had some high school training. Sixteen percent of participants had a post graduate level of education; 7.4% had some early educational instruction; 4.3% of participants were currently in school; 22.4% of women who attended the screening had never attended school and were unable to read or write.

Employment: The majority of women who attended the screening, 68.8%, indicated some form of employment, 28% were unemployed and 3.2% did not respond to the question. Of those who were employed, 372 (38%) were self-employed. Self-employed women included entrepreneurs, mostly in the restaurant or cleaning sectors, but the majority of women listed their occupation as street vendors. The remaining employed women worked as civil servants, on coal farms, in agriculture, in restaurants, hotels or with other private businesses.

### Socio-cultural and sexual behavior

History of smoking: There were 899 responders. The majority of Liberian women had no prior or current history of smoking. Among all women surveyed, 869 (96.7%) had never tried or used tobacco or

other forms of herbs for smoking. Use of alcohol was not ascertained in the survey (Tables 2 & 3).

**Cooking practices:** The main fuel source used for cooking in Liberia was coal. There were 794 respondents. Seventy-three percent of women (684 of participants) used coal for both indoor and outdoor cooking, while 2.7% used wood as their only fuel source. Five percent of women used a combination of coal and wood. Although 1% of women had stoves in their kitchen, they all indicated that they had not used it in the past year. Most women cooked outdoors.

**Circumcision:** Examinations showed that circumcision was performed on 318 women (30.5%) who attended the screening. Male circumcision: Eight hundred and five women (92%) indicated that their current male partner was circumcised.

**Sexual debut:** The average age of first sexual encounter was 17 years (range 15-36 years). Average total number of sexual partners was 4.35 (range 0-30). Only 254 participants responded to questions regarding anal or oral sexual practices; the majority of women declined to answer. Of those who responded, 5 women (2%) engaged in anal sex and 89 (34.2%) engaged in oral sex.

### Reproductive health

**Pregnancies:** Average number of conceptions was 4.49 with a range from 0-17. Of the 931 women who responded, 531 (51%) reported having conceived more than 4 times (Table 4).

**Abortions:** Sixty-four percent of women who responded to the question of abortion had at least one abortion performed in their lifetime, with the majority of women (52%) having had between one and three abortions performed.

**Family planning/contraception:** More than half of the women surveyed used some form of contraception (50.2%). The most commonly used method of contraception was oral contraceptives (N=353). Seventy-seven women used hormonal injections, while only 25 respondents reported IUD use. Only 27 respondents said they use condoms.

### Inter Partner Violence (IPV) and Rape

Only 317 patients responded to questions regarding IPV. Of these, 21.9% (N=69) experienced some form of IPV currently or with previous partners. Eight hundred and fifty-five patients responded to questions regarding rape. Of these, 77 (8.7%) were subjected to rape at some time in their life.

## Discussion

The information reported here was obtained from a questionnaire used in conjunction with an IRB approved pilot cervical cancer, STI, and HIV screening program in Liberia. This report represents the most detailed information to date on socio-cultural and sexual behaviors as it relates to the health of Liberian woman. Responses were obtained by nurses during one-on-one interviews with consented participants and recorded on hard copy questionnaires for data entry and analysis. All nurses who conducted interviews attended a 4-day workshop on ethics, research, and informed consent, as well as practical training for screening patients for cervical cancer and STIs. This workshop certified all nurses before the start of the screening program.

**Table 1:** Demographics.

		N= 978
Age	Mean = 39.9yrs, Range = 16-85yrs	54 (5.5%)
	No answer	
Place of Birth	Liberia	848 (42.6%)
	Other	11 (1.1%)
	No Answer	550 (56.2%)
County of Residence	Montserrado	598 (61.1%)
	Bong	65 (6.6%)
	Grand Bassa	55 (5.6%)
	Lofa	45 (4.6%)
	Margibi	43 (4.6%)
	Nimba	29 (3.0%)
	Bomi	27 (2.8%)
	Sinoe	17 (1.7%)
	Grand Cape Mount Sinai Hospital Maryland	10 (1.0%)
	Rivercess	10 (1.0%)
	Grand Kru	10 (1.0%)
	Grand Gede	9 (0.9%)
	Gbarpolu	7 (0.7%)
	River Gee	4 (0.4%)
	No Answer	4 (0.4%)
		45 (4.6%)
	Marital Status	Married
Single		351 (35.9%)
Co-Habiting		96 (9.8%)
Widowed		48 (4.9%)
Divorced		18 (1.8%)
Separated		15 (1.5%)
	No Answer	37 (3.8%)
Religion	Christian	870 (89.0%)
	Muslim	363 (3.7%)
	Traditional	1 (0.1%)
	No Answer	71 (7.3%)
Education	High school	310 (31.7%)
	No School	211 (21.6%)
	Any School	162 (16.6%)
	Post High School	159 (16.3%)
	Currently in School	40 (4.1%)
	No Answer	96 (9.8%)
Employment	Employed	649 (66.4%)
	Self Employed	369 (56.9%)
	Unemployed	268 (27.4%)
	No Answer	61 (6.2%)

There were several iterations of the final questionnaire that was administered at the screening program. Researchers met daily with health workers to review questions for cultural and linguistic

**Table 2:** Sociocultural factors.

		N= 978
Smoking History	Non-Smokers	877 (89.7%)
	Smokers	30 (3.1%)
	No Answer	71 (7.3%)
Cooking Practices – Fuel Source	Coal Only	697 (71.3%)
	Coal and Wood	48 (4.9%)
	Wood Only	25 (2.6%)
	Stove and Coal	22 (2.2%)
	Electric Stove	7 (0.7%)
	No Answer	179 (18.3%)
Location of Cooking	Indoor	233 (23.8%)
	Outdoor	229 (23.4%)
	Indoor and Outdoor	32 (3.3%)
	No Cooking	8 (0.8%)
	No Answer	476 (48.7%)

**Table 3:** Sexual practice.

		N= 978
Age at First Coitus	Mean = 17yrs, Range = 10-37 yrs	
	No Answer	141 (14.4%)
Number of Sexual Partners (N=706)	Mean = 4.33, Range = 1-30	
	No Partners	9 (0.9%)
	No Answer	272 (27.8%)
Sexual Trauma		
History of Rape (N=893)	No	815 (83.3%)
	Yes	78 (8.7%)
	No Answer	85 (8.7%)

appropriateness. Several questions were changed and others eliminated during the course of the project. For example, the question regarding “Female Genital Mutilation” was unanimously objected to and instead the term “Female Circumcision” was substituted. Questions regarding “Rape” were intentionally vague, avoiding detailed information such as time, frequency, or circumstances. Without a mental health worker as part of the health care team, resurfacing of such emotionally charged experiences was felt to be inappropriate. Therefore, information regarding childhood, adolescent, adult, or wartime rape was not elicited. However, some women voluntarily gave more detailed information in response to the “Yes” or “No” question regarding rape. This information was not recorded.

The majority of women who attended the screening reported Christianity as their religion. According to the United States Department of State (2013), in Montserrado County, where most of the respondents resided, Christians make up 85.6% of the population and Muslims account for 12.2% of the population [9]. It was surprising, therefore, that only 3.8% of Muslim women made up this research sample, despite public service announcements in both churches and Mosques in Monrovia.

While one third of the women who attended the screening

**Table 4:** Reproductive health.

		N= 978
Conceptions	Mean = 4.49, Range = 1-17	
	No Answer	39 (4.0%)
Abortions	Mean = 1.53, Range = 1-12	
	No Answer	72 (7.4%)
Contraception/Family Planning Use	Yes	469 (48.0%)
	Oral Contraceptives	344 (73.3%)
	Hormonal Injections	75 (16.7%)
	Intra-Uterine Device	25 (5.0%)
	Condoms	25 (5.0%)
	No	410 (41.9%)
	No Answer	156 (16.0%)

program had some form of genital cutting, none of the participants under age 20 reported or were noted on exam to have had the procedure performed. Circumcision among Liberian men appears to be universally accepted due to either religious or cultural norms, and therefore is not considered a risk factor for STIs among Liberian women.

It can be assumed that many of the questions relating to sexual preferences and rape were underreported, as these questions were initially difficult for both health workers and respondents to navigate. The majority of attendees chuckled nervously when asked intimate questions and responses to these questions fell below 30%. Although many participants denied undergoing female circumcision, upon examination, several of the patients who responded negatively were noted to have had the procedure. Health workers were advised to report genital cutting in the affirmative on the questionnaire based on examination irrespective of patient response. It was not surprising therefore that the prevalence of female genital cutting in this study was far lower than the 66% reported by UNICEF [10].

Sexual debut among participants was noted to be 17 years of age (range 15-36). Therefore, HPV vaccination targeting children ages 9-12 seems an appropriate strategy for prevention from future HPV acquisition. Use of condoms among Liberian women enrolled in the study was low at <4%. Information from focus groups conducted at the time of screening attributed the low use to lack of favor by their male partners.

Despite abortions being illegal in Liberia, 63.5% of women had at least one abortion, and most abortions were performed outside of a medical setting. Based on provider information there is a high rate of complications attributed to "home" abortions; this has been a source of growing concern in Liberia. Education targeting teens and adults about the dangers and alternatives to illegal abortions and use of contraception is critical to decreasing maternal morbidity and mortality in Liberia.

### Challenges

Although the study included a large number of patients, findings may not be representative of women in the more rural areas of Liberia. The practice of female circumcision for instance, is known to be more frequently practiced in rural Liberian communities, which

together with underreporting, may account for a lower country-wide prevalence than was reported by UNICEF.

### Conclusion

This cross sectional study describes the socio-cultural and sexual practices of Liberian women residing primarily in Montserrado County. A minority of women who participated came from more rural areas and consequently this study cannot be used to define the country as a whole. It however, presents important demographic data that can be used in shaping future interventions that would impact reproductive health of women in Liberia.

### Recommendations for Future Research and Intervention:

Future projects should assess the barriers to reproductive health screening among Muslim women in Liberia. The number of Muslim women enrolled in this study was insufficient to draw any conclusions regarding risks for cervical cancer or STIs among Muslim women.

Because cigarette-smoking rates were low among participants, making it an almost insignificant risk factor for cervical cancer among this population, we briefly explored how exposure to wood and coal burning could act as a risk factor among this group. Moving forward, other similar smoke exposures, such as that from wood and coal burning could be explored as possible toxins that, in concert with high risk HPV, may increase the risk for cervical cancer.

The traumatic past that most Liberian women have experienced portends an important role for mental health services in all aspects of intervention or research that explores that emotional past. In 2011 The Carter Center graduated their first group of nurses trained in mental health. Incorporating the expertise of trained Liberian mental health workers in cervical cancer, HIV, maternal loss, and post abortion health programs is an important multidisciplinary approach for future projects.

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