

Knowledge, Attitudes and Practices towards Cervical Cancer Prevention among Female Sex Workers in the Douala Municipality, Cameroon

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Abstract

Background: Cervical cancer is caused by a virus known as Human Papilloma Virus (HPV) which is sexually transmitted, and is implicated in 99.7% of cervical cancers and several other cancers that affect both men and women. Female Sex Workers (FSWs) are at very high risk of having HPV and cervical cancer, because of their recurrent exposure to sexual practices, which often include unprotected vaginal or anal sex.

Objective: This study was aimed at investigating the level of knowledge, attitudes and practices of cervical cancer prevention among FSWs in Douala.

Methods: A qualitative cross sectional study was conducted supplemented with quantitative methods. The study population comprised all the student nurses on clinical placements in Regional Hospital Limbe. This was a cross sectional study conducted in Douala. Data on knowledge, attitudes and practices of cervical cancer prevention was collected using a semi- structured questionnaire. Two municipalities out of six were selected through a purposive sampling approach. In each of the municipality, convenience sampling approach was used to select FSWs. Data collected was entered using excel spreadsheet version 2016 and analysed using SPSS version 24. Descriptive statistics were used to summarise data collected.

Results: A total of 384 FSWs participated in this study and their ages ranged from 20 to 70 years. The findings revealed that 35.5 % of the participants had adequate knowledge, 43.8% had negative attitudes towards cervical cancer prevention, and 26.6% had good practices towards cervical cancer prevention. These results can help to inform health personnel to reinforce health education on cervical cancer prevention among female sex workers.

Conclusion: These findings indicate that FSWs had inadequate knowledge, negative attitudes and a poor practice towards cervical cancer prevention. Therefore, there is need to put in place strategies to educate this group on cervical cancer prevention.

Keywords: Female Sex Workers, Cervical cancer, Attitudes, Knowledge, Practice, Human Papilloma Virus.

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INTRODUCTION

Cervical cancer is a disease in which the cells of the cervix become abnormal and start to grow uncontrollably forming malignant tumours. It is caused by a virus known as Human Papilloma Virus (HPV), which is sexually transmitted and is implicated in 99.7% of cervical cancers and several other cancers that affect both men and women. Cancer of the cervix is a serious burden on the reproductive health of women worldwide, despite the fact that it is preventable. In addition, cervical cancer is the second most common cause of cancer-related deaths among adult women globally [1].

Cervical cancer remains a major public health problem, ranking as the fourth most common cause of cancer incidence and mortality in women worldwide. [2]. In 2018, 570,000 cases of cervical cancer were estimated to have occurred, with over 300,000 deaths. It is the second most common cause of female specific cancer after breast cancer, accounting for around 8% of both total cancer cases and total cancer deaths in women [3] cause of death in the United States [4]. About 80% of cervical cancers occurred in developing countries. The distribution of cervical cancer differs across the world, with more than 85% of deaths occurring in developing regions [5]. Cervical cancer is the most commonly diagnosed malignancy during pregnancy with an incidence of 1.5 to 12 per 100,000 pregnancies [6].

Organized cytology-based screening programmes to achieve high coverage rates by using Papanicolaou (pap) smears and treatment of pre-cancerous lesions has led to a significant decrease in the prevalence of cervical cancer cases and in turn increased mortality in developed countries [7]. However, these successes of organised screening have not been replicated in developing countries, reflecting an enormous global cervical cancer burden of 83% [7]. Such imbalances are alarming and literature has shown that developed countries have an average screening coverage of 63%, compared to 19% in developing countries [8]. Early screening is a proven cost-effective cervical cancer control strategy [9].

The trend of cervical cancer being most prevalent among women in low resource settings was not unique to Africa, but was also seen in other developing parts of the world, this is due to lack of precursor screening. A host of factors have been blamed on low screening and these include; low literacy levels, poverty, ignorance, lack of equipment and lack of trained medical staff [10]. In contrast, very low

rates were seen in developed countries. Cervical cancer was the fourth most common cancer in women worldwide with 604,127 new diagnoses per year, 6.5% of cancers in women [11].

In Cameroon, cervical cancer was the second most common cancer, with 2770 new diagnoses per year, 13.4% of cancers in women and it was the second leading cause of cancer related deaths with an estimated 1787 deaths per year [12]. Cervical and breast cancer are a great concern in the health sector, since they were rated as the most common cancers in developing countries [10]. Almost all cervical cancers were caused by human papillomavirus infection, which was the most common sexually transmitted infections [1].

The prevalence of HPV was higher in less developed countries (42.2%) than in developed countries (22.6%) and higher in women who engaged in sexual activities. For instance, having sexual intercourse at a young age, increased number of pregnancies, increased number of sexual partners, unprotected sex, long-term use of hormonal contraceptive [13]. Smoking, and experience of sexual violence were all recognised as significant risk factors for HPV infection [14]. In addition, female sex workers were a population subgroup at very high risk of HPV and cervical cancer, because of their exposure to high-risk sexual practices (unprotected vaginal or anal sex) [15]. From an intra-interpersonal perspective, they may be subjected to stigma from health care workers [16]. Due to frequent sexual intercourse with multiple partners, they are predisposed to Sexual Reproductive Health (SRH) challenges and social inequities such as STIs, including but not limited to HIV and human papillomavirus (HPV), among others [17]. They are at increased risk of women's health-associated morbidity and mortality especially from obstetrical-related complications as well as STIs (HIV, HPV) [18].

In Cameroon, even though commercial sex work is illegal, it is very common especially in urban cities and touristic areas. There are about 1,125,800 FSWs in the country which comprises 2% of the female population aged 15-64 years [19]. This number is expected to continue rising due to long-term prevailing socio-political crisis in the English-speaking region of Cameroon which is causing migration into nearby French-speaking regions without shelter and basic necessities crucial for survival [20]. Women who resort to being commercial sex workers due to displacement from conflicts, faced more serious inequities, healthcare challenges such as contracting

HIV, HPV infections which may lead them to genital warts or cervical cancer [21]. However, there is scarcity of relevant studies on FSWs' engagement in unhealthy behaviours and how they promote health and or prevent illnesses.

This knowledge gap is critical to inform comprehensive and multi-level health promotion and disease prevention strategies based on the needs and wants of FSWs [20]. Therefore, this study sought to investigate the knowledge on cervical cancer, attitudes and practices of Female Sex Workers (FSWs), towards cervical cancer prevention in Douala. Specifically, we determined the proportion of FSWs who had knowledge on cervical cancer prevention, determined the attitudes of FSWs towards cervical cancer prevention and the proportion of FSWs in Douala who practiced cervical cancer prevention. It is worth noting that regular cervical cancer prevention practices will improve on early diagnosis, early medical intervention and better prognosis. This will in turn limit the progression of HPV to cause diseases such as cervical cancer and genital warts.

METHODS

We conducted a community based cross-sectional study to investigate the knowledge, attitudes and practices of Female Sex Workers (FSWs), towards Cervical Cancer prevention. The study was carried out in Douala III and Douala IV for a period of six months that is, from March, 2021 to August, 2021. The purposive sampling technique was used to select the study sites. Douala III and IV were selected simply because of the existence of the organisation dealing with Female Sex Workers (FSWs) in these Municipalities. Douala is the most populated city in Cameroon, with a population of 3,354,978 inhabitants. It is situated in the Littoral Region; it is the commercial and economic capital of Cameroon and the entire CEMAC region comprising Gabon, Congo, Chad, Equatorial Guinea, Central African Republic and Cameroon.

Douala has six municipalities (Douala I-VI); Douala III is limited to the South and West by the Dibamba River, with a population of 1,020,061 inhabitants and made up of 103 quarters [21]. Douala IV extends on the right bank of the Estuary of the Wouri between the Bonassama District on the Southern shore of the peninsula and the borders of Mougo Division in the Bonjogo, Ndobon and Bonendale Districts. It has a population of 395,536 inhabitants and it is made up of 10 quarters [22]. The target population was made up of all FSWs within 20-70 years old, who have been living in Douala for at least six months. All FSWs who

voluntarily signed the consent form to participate in the study were included in the study. Female sex workers who met the inclusion criteria but, who were mentally unstable or too ill during the period of research were excluded from the study. The sample size for the study was calculated using the Cochran's formula:

$$n = z^2 p (1-p) / e^2$$

$$n = 3.84(0.5)(0.5) / (0.05)^2 = 384.16 = 384 \text{ patients}$$

Where; n = minimum sample size

Z = standard normal variation which will be set at 1.96 (p value: 0.05 and 95% confidence interval)

P = prevalence of cervical cancer in patients.

e = precision = 0.05

The standard prevalence of 50% (0.5) was assumed since there was no data on the prevalence from similar studies.

A sample of 384 FSWs selected by purposive and convenient sampling techniques participated in the study. The sample was distributed between the two selected municipalities using the probability proportionate to size. Every FSW who was encountered during the study period was approached and requested to participate in the study. This study used both qualitative and quantitative methods to collect data. A semi-structured questionnaire which comprised both closed and open ended questions was used to collect data. Data was collected on knowledge on cervical cancer, attitudes and practices towards cervical cancer prevention.

The questionnaire was pretested in order to validate the study questions. This was done by administering 20 copies of the questionnaire to twenty FSWs who were not part of the study population. Their responses confirmed the clarity and validity of the questions. The questionnaire was then translated into French by a translator and copies of the questionnaire were then administered to the study participants who completed the various sections of the questionnaire. The questions were read to those who could not read and their responses written down. Data was entered into Epi Info version 7.2 and transfer to SPSS version 26 for analysis. Descriptive statistics was done where frequencies and percentages were calculated and results were presented on tables and charts.

Logistics regression was used to bring out the factors that are associated with knowledge, and practices of FSWs regarding cervical cancer prevention. The questions

on knowledge, and preventive practices were scored; each correct response to the knowledge and preventive practices questions were scored one point and any wrong or non-response was given a zero. Questions on Knowledge and preventive practices were scored based on a 2 point Likert scale. A cut off score of 50% was used. The total score obtained by each respondent was converted to percentage and scores < 50% were graded as poor and scores $\geq$ 50% as good.

All the questions under knowledge were classified by a given score, each question was given a score for each participant. The mean of total score was calculated as a cutoff point. Any participant who had a total score above the mean had adequate (good) knowledge. On the hand, if a participant had a total score less than the mean had inadequate (poor) knowledge. Similarly for practice, any participant who had a total score above the mean had good practice while any participant who had a total score less than the mean had poor practice.

Ethical Approval

This study was reviewed and authorised by the Faculty of Health Sciences, ethical approval was obtained from the Institutional Review Board of the Faculty of Health Sciences of the University of Buea. Also, an administrative approval was obtained from the Regional Delegation of Public Health Littoral Region. All participants provided written consent before participating in the study.

RESULTS

In this study, 384 participants were enrolled and all of them were females (100%). The participants were in the age range 20 – 70 years with a mean age of 36.51 ± 9.817 . Majority [253(65.9%)] of the participants were single, for 274 (71.4%) their major occupation was Commercial Sex and 249 (64.8%) of the participants highest level of education was Secondary School level (Table 1). Most [323 (84.1%)] of the participants had heard of cervical cancer; out of these, 189 (58.5%) heard about cervical cancer through the media (Figure 1).

Table 1. Socio-demographic Characteristics of the Study Population (n= 384)

Parameters	Level	n (%)
Sex	Female	384 (100)
	Total	384(100)
Age group (years)	20 – 29	123 (32.0)
	30 – 39	110 (28.7)
	40 – 49	104 (27.1)
	50 – 59	32 (8.3)
	$\geq$ 60	15 (3.9)
	Total	384 (100)
Mean Age (years)	36.51 ± 9.817	
Marital Status	Married	78 (20.3)
	Single	253 (65.9)
	Widow	53 (13.8)
	Total	384 (100)
Occupation	CSW	274 (71.4)
	Student	63 (16.4)
	Workers	47 (12.2)
	Total	384 (100)
Level of education	No formal education	7 (1.8)
	Primary	66 (17.2)
	Secondary	249 (64.8)
	University	62 (16.2)
	Total	384 (100)

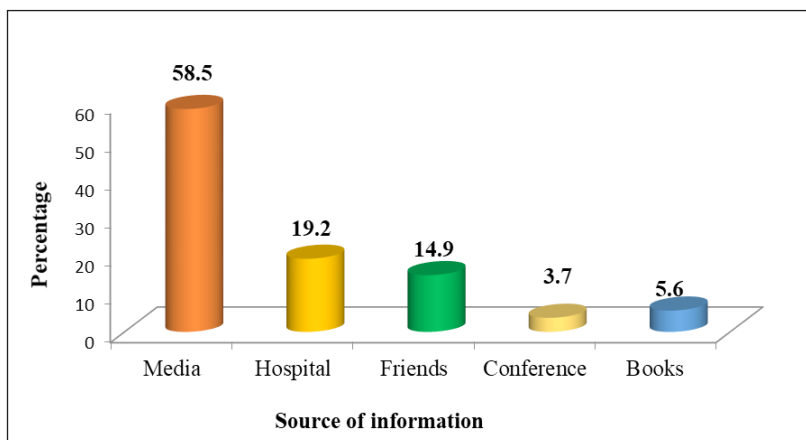


Figure 1. Sources of Information on Cervical Cancer

Less than half [176 (45.8%)] of the participants reported that cervical cancer is a disease arising from the cervix. More than half [267(69.5%)] of the participants do not know the cause(s) of cervical cancer and out of [117(30.5%)] who knew the causes of cervical cancer,

82 (70.1%) reported HPV as the major cause of cervical cancer (Table 2). The most frequent symptoms of cervical cancer reported by the participants were dysfunctional uterine bleeding (65.5%) and post coital bleeding (25.7%) (Figure 2).

Table 2. Knowledge on Cervical Cancer Definition and its causes by participants

Parameters	Response	n(%)
Definition of cervical cancer	A disease arising from the cervix	176 (45.8)
	A disease cause by witchcraft	12 (3.1)
	Abnormal proliferation of cells of the cervix	110 (28.6)
	Is a benign tumour	12 (3.1)
	Is a malignant tumour	18 (4.7)
	It is not real	26 (6.8)
	No idea	30 (7.8)
Knowledge on the causes of cervical cancer	Yes	117 (30.5)
	No	267 (69.5)
Causes of cervical cancer for those who knew	During delivery	34 (29.1)
	HPVirus	82 (70.1)
	Pain in the cervix	1 (0.01)

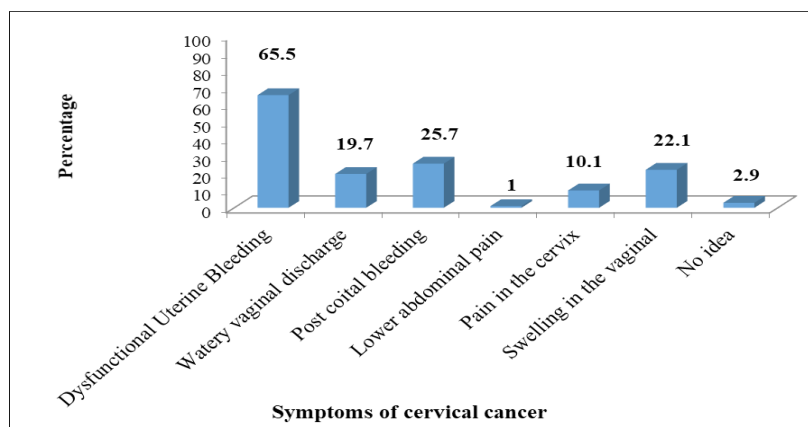


Figure 2. Knowledge on Symptoms of Cervical Cancer

Concerning the risk factors of cervical cancer, multiple deliveries [178(46.3%)] and sexually transmitted infections [172 (44.8%)] were the major risk factors of cervical cancer reported by the study participants (Figure

3). Most [150 (39.1%)] of the participants reported Colposcopy as the major screening method of cervical cancer and 169(44%) reported that screening for cervical cancer should be done at puberty (Table 3).

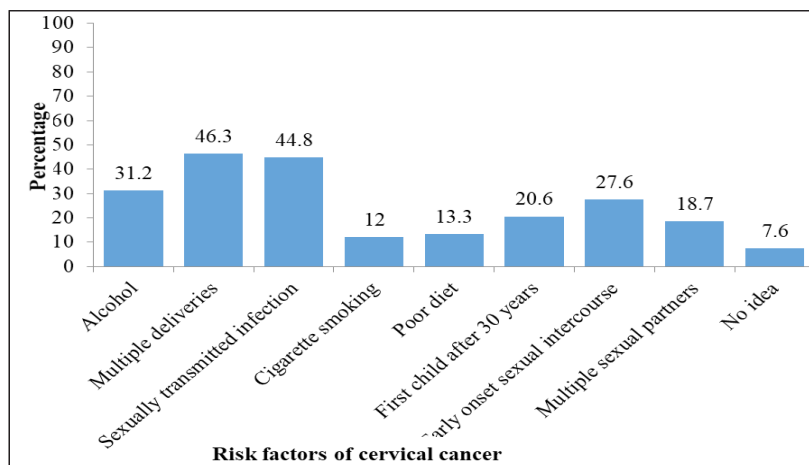


Figure 3. Knowledge on Risk Factors of Cervical Cancer

Table 3. Knowledge on Screening Methods of Cervical Cancer prevention

Parameters	Response	n(%)
Screening methods for cervical cancer	Colposcopy	150 (39.1)
	Pap Smear	82 (21.3)
	No idea	152 (39.6)
Age of which should cervical cancer screening be done	From puberty	169 (44.0)
	18 - 19	19 (4.9)
	20 – 24	23 (6.0)

Regarding the treatment options for pre-cancerous lesions, less than half [122 (31.8%)] of the participants selected treatment with Chemotherapy, surgery [160(41.5%)] was the best way of treating cervical cancer while no treatment idea was [112 (29.2)] (Table 4). Talking about knowledge on cervical cancer prevention methods, regular

screening check-ups [286(74.4%)] and vaccination [146(37.5%)] were the major ways of preventing cervical cancer reported by the participants (Figure4). Regarding participants' attitudes on cervical cancer prevention, less than half of the participants [168(43.8%)] strongly agree that they can do cervical cancer screening. Less than half

Table 4. Knowledge on the treatment of Cervical Cancer

Parameter	Response	n(%)
Best treatment if you happened to have pre-cancerous lesions	Treatment with Chemotherapy	122 (31.8)
	Treatment with Radio therapy	63 (16.4)
	Treatment with Thermacoagulation	46 (12.0)
	Treatment with Surgery	59 (15.4)
	Treatment with Cryotherapy	60 (15.6)
	Traditional medicine	20 (5.2)
	Drugs	63 (16.4)
	Surgery	34 (8.9)
	No idea	122 (31.8)

Best treatment if you happened to have cervical cancer	Treatment with Chemotherapy,	76 (19.8)
	Treatment with Radio therapy,	84 (21.8)
	Treatment with Thermacoagulation	66 (17.2)
	Treatment with Cryotherapy	31 (8.1)
	Loop Electrosurgical Excision Procedure	24 (6.3)
	Drugs	61 (15.8)
	Surgery	160 (41.5)
	No idea	112 (29.2)

of the participants [130 (33.9%)] strongly agree that it is good to do cervical cancer screening (Figure 5). Of the 384 participants enrolled, less than half of the participants,

174(45.3%) accepted that female sex workers should be screened for cervical cancer.

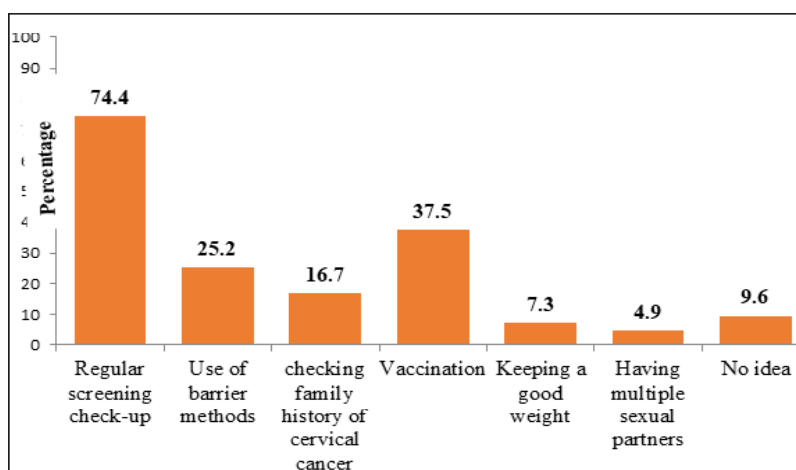


Figure 4. Cervical Cancer Prevention Methods

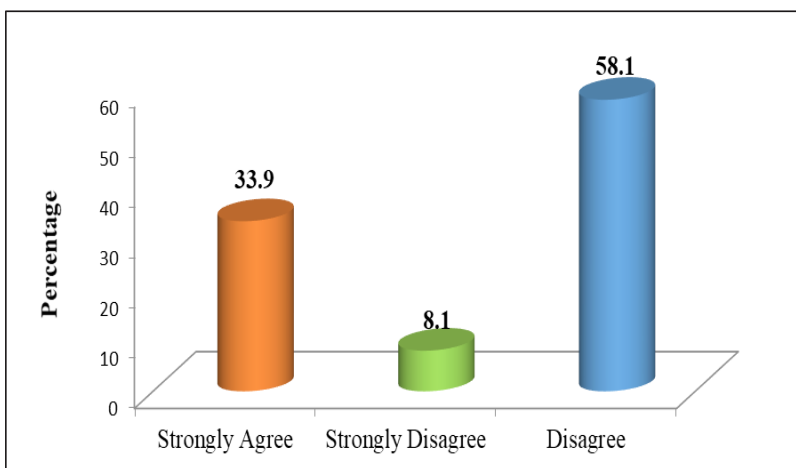


Figure 5. Perception on Cervical Cancer Screening

When the participants were asked about their practices regarding cervical cancer prevention, 215 (56%) participants had done cervical cancer screening, and 97 (57.4%) of the 215 did the screening in a hospital. Less than half [149 (38.8%)] of the participants had no idea on how often cervical cancer screening should be done, while

[204(53.1%)] reported that cervical cancer screening should be done by a Gynaecologist. Also, most [126 (32.8%)] of the participants had no idea on how often they should go for cervical cancer screening. However, 322(83.9%) reported that they can recommend someone to do a cervical cancer screening and 326(84.9%) said

they can recommend someone to take the vaccine for cervical cancer prevention. The reason being that, cervical cancer vaccine is a preventive measure against the disease (Table 5). Moreover, 215 (56.0%) participants do not practice cervical cancer prevention with reason being that cervical cancer is not real. Less than half [157(40.9%)] of the participants reported that the main benefit of cervical

cancer prevention is that, it saves lives. Again, 299(77.9%) of the study participants reported that none of their family members has ever been diagnosed of cervical cancer and among those whose family member had been diagnosed of cervical cancer, 54(63.5%) of them said, it was their sister (Table5).

Table 5. *Participants on Cervical Cancer Prevention Practice*

Parameters	Response	n(%)
Have ever done cervical cancer screening	No	215(56.0)
	Yes	169(44.0)
If yes, where	Horizon Femmes	72(42.6)
	Hospital	97(57.4)
How often should we do cervical cancer screening	After three years	30(7.8)
	No idea	149(38.8)
	When you have a problem	54(14.1)
	Yearly	151(39.3)
Cervical cancer screening should be done by	Doctor	120(31.3)
	Gynaecologist	204(53.1)
	Nurse	60(15.6)
Cervical cancer screening is often done	Every three years	27(7.0)
	No Idea	126(32.8)
	None	62(16.1)
	Occasionally	27(7.0)
	When there is campaign	30(7.8)
	When you have a problem	27(7.0)
	Yearly	85(22.1)
Recommend someone to do cervical cancer screening	No	62(16.1)
	Yes	322(83.9)
Recommend someone to take the vaccine for cervical cancer prevention	No	58(15.1)
	Yes	326(84.9)
Give your reasons	Because cancer kills	77(23.6)
	Early detection safe life	35(10.7)
	For prevention	214(65.6)
	It is not real	58(17.8)

Overall, of the 384 participants enrolled in this study, 136 (35.4%) had good knowledge on cervical cancer while 102 (26.6%) had good practice regarding cervical cancer prevention.

Looking at factors associated with knowledge on cervical cancer, predictors with P-value ≤ 0.2 in the bivariate analysis were selected for multivariate analysis. After running the bivariate analysis, those who were students

were about 2 times less knowledgeable than workers (crude OR = 2.593; 95% CI: 1.132- 5.939, $p = 0.024$). Respondents who had attained only primary education were almost about 7 times less knowledgeable than those who had attained university education (crude OR = 7.250;

95% CI: 2.974-17.676, $p = 0.000$). Marital status was also significantly associated with level of knowledge with a p -value of 0.026 and 95% CI: 0.228-0.909. Age was found not to be significantly associated with level of knowledge ($p=0.026$) (Table 7).

Table 6. *Cervical Cancer Practice*

Parameters	Response	n(%)
Do you practice cervical cancer prevention?	Yes	169(44.0)
	No	215(56.0)
If answer to the question above is yes, how often	Respect of vaccination appointment	110(65.1)
	Going for STI screening	30(17.7)
	Use of condoms	29(17.2)
If answer is no, why	Not real	32(14.8)
	No idea	93(43.2)
	Because preventive methods are not 100%	30(14.0)
	Lack of opportunity	30(14.0)
	Laziness	27(12.6)
	Lack of time	3(1.4)
What are the benefits for cervical cancer prevention?	Cheap to prevent than to cure	99(25.8)
	It saves lives	157(40.9)
	To be free of cervical cancer	128(33.3)
Has any member of your family has been diagnosed of cervical cancer?	Yes	85(22.1)
	No	299(77.9)
If answer to the question above is yes, what is her relationship to you?	Sister	54(63.5)
	Aunt	31(36.5)

Table 7. *Factors Associated With Knowledge on Cervical Cancer*

Factors	Level of Knowledge		COR	P – value	95% CI
	Adequate Knowledge (%)	Inadequate knowledge (%)			
Age group					
20 – 29	39 (31.7)	84 (68.3)	0.000	0.998	0.000 - ∞
30 – 39	34 (30.9)	76 (69.1)	0.000	0.998	0.000 - ∞
40 – 49	45 (71.4)	18 (28.6)	0.000	0.998	0.000 - ∞
50 – 59	18 (56.3)	14 (43.7)	0.000	0.998	0.000 - ∞
≥ 60	0 (0)	15 (100)	1		
Marital Status					
Married	25 (32.1)	53 (67.9)	0.620	0.242	0.279 - 1.381

Single	99 (39)	155 (61)	0.455	0.026	0.228 - .909
Widow	12 (22.6)	41 (77.4)	1		
Occupation					
CSW	102 (37.2)	172 (62.8)	1.249	0.488	0.667 - 2.341
Student	14 (22.2)	49 (77.8)	2.593	0.024	1.132- 5.939
Workers	20 (42.6)	27 (57.4)	1		
Level of education					
No formal education	0 (0)	7 (100)	0.000	0.999	0.000 - ∞
Primary	8 (12.1)	58 (87.8)	7.250	0.000	2.974-17.676
Secondary	97 (39)	152 (61)	1.567	0.115	0.896 - 2.741
University	31 (50)	31 (50)	1		

Upon running the multiple logistic regression analysis, age and marital status were not significantly associated with knowledge of cervical cancer. Students were almost about 4 times less knowledgeable than workers (AOR = 4.785; 95% CI: 1.967-11.636, $p = 0.001$). Also, respondents who

had attained only primary education were almost about 9 times less knowledgeable than those who had attained university education (AOR = 9.392; 95% CI: 3.719-23.718, $p = 0.024$) (Table 8).

Table 8. Independent Factors Associated with the Level of Knowledge on Cervical Cancer

Factors	Level of Knowledge		AOR	P - value	95% CI
	Adequate Knowledge (%)	Inadequate knowledge (%)			
Marital Status					
Married	25 (32.1)	53 (67.9)	0.844	0.695	0.361 - 1.973
Single	99 (39)	155 (61)	0.483	0.059	0.226 - 1.029
Widow	12 (22.6)	41 (77.4)	1		
Occupation					
CSW	102 (37.2)	172 (62.8)	1.248	0.538	0.617 - 2.526
Student	14 (22.2)	49 (77.8)	4.785	0.001	1.967- 11.636
Workers	20 (42.6)	27 (57.4)	1		
Level of education					
No formal education	0 (0)	7 (100)	0.000	0.999	0.000 - ∞
Primary	8 (12.1)	58 (87.8)	9.392	0.000	3.719 - 23.718
Secondary	97 (39)	152 (61)	1.779	0.054	0.990 - 3.198
University	31 (50)	31 (50)	1		

With respect to factors associated with the practice on cervical cancer prevention, predictors with P-value ≤ 0.2 in the bivariate analysis were selected for multivariate analysis. After running the bivariate analysis, respondents between 40-49 years and 50-59 years of age were about 3 times (crude OR = 3.412; 95% CI: 1.073-10.844, $p = 0.038$)

and 4 times (crude OR = 4.667; 95% CI: 1.072-20.322, $p = 0.040$) less likely to have good practice towards cervical cancer prevention than those above 60 years of age. Participants who had attained only primary and only secondary education were 4 times (crude OR = 4.886; 95% CI: 2.059-11.590, $p = 0.000$) and 2 times (crude OR =

2.139; 95% CI: 1.203-3.803, $p = 0.010$) less likely to have good practice towards cervical cancer prevention than those who had attained higher education (Table 9).

Results from multiple logistic regression analysis revealed that, respondents between 40-49 years and 50-59 years of age were about 17 times (crude OR = 17.302; 95% CI: 3.000-99.777, $p = 0.001$) and 21-times (crude OR = 21.466; 95% CI: 2.570-179.296, $p = 0.005$) less likely to

have good practice towards cervical cancer prevention than those above 60 years of age. Participants who had attained only primary and only secondary education, were 3-times (AOR = 3.857; 95% CI: 1.486-10.012, $p = 0.006$) and 2-times (AOR = 2.581; 95% CI: 1.376-4.840, $p = 0.003$) less likely to have good practice towards cervical cancer prevention than those who had attained higher education (Table 10).

Table 9. Factors Associated with of Practice of Cervical Cancer

Factors	Level of Practice		COR	P - value	95% CI
	Good practice (%)	Poor practice (%)			
Age group					
20 - 29	46 (37.4)	77 (62.6)	1.116	0.844	0.373 - 3.338
30 - 39	29 (26.4)	81 (73.6)	1.862	0.275	0.610 - 5.688
40 - 49	17 (16.3)	87 (83.7)	3.412	0.038	1.073 - 10.844
50 - 59	4 (12.5)	28 (87.5)	4.667	0.040	1.072 - 20.322
≥ 60	6 (40)	9 (60)	1		
Marital Status					
Married	19 (24.4)	59 (75.6)	1		
Single	83 (32.8)	170 (67.2)	0.660	0.160	0.369 - 1.178
Widow	0 (0)	53 (100)	0.000	0.997	0.000 - ∞
Occupation					
CSW	58 (21.2)	216 (78.8)	1.922	0.056	0.984 - 3.754
Student	28 (44.4)	35 (55.6)	0.645	0.272	0.295 - 1.410
Workers	16 (34)	31 (66)	1		
Level of education					
No formal education	0 (0)	7 (100)	0.000	0.999	0.000 - ∞
Primary	9 (13.6)	57 (86.4)	4.886	0.000	2.059 - 11.590
Secondary	66 (26.5)	183 (73.5)	2.139	0.010	1.203 - 3.803
University	27 (43.5)	35 (56.5)	1		

Table 10: Independent Factors Associated with the Level of Practice of Cervical Cancer

Factors	Level of Practice		AOR	P - value	95% CI
	Good practice (%)	Poor practice (%)			
Age group					
< 30	46 (37.4)	77 (62.6)	11.119	0.012	1.717 - 72.013
30 - 39	29 (26.4)	81 (73.6)	11.247	0.009	1.830 - 69.104
40 - 49	17 (16.3)	87 (83.7)	17.302	0.001	3.000 - 99.777
50 - 59	4 (12.5)	28 (87.5)	21.466	0.005	2.570 - 179.296
≥ 60	6 (40)	9 (60)	1		

Marital Status					
Married	19 (24.4)	59 (75.6)	1		
Single	83 (32.8)	170 (67.2)	0.695	0.397	0.300 – 1.612
Widow	0 (0)	53 (100)	0.000	0.997	0.000 - ∞
Occupation					
CSW	58 (21.2)	216 (78.8)	1.674	0.201	0.760 - 3.689
Student	28 (44.4)	35 (55.6)	1.034	0.939	0.434 - 2.463
Workers	16 (34)	31 (66)	1		
Level of education					
No formal education	0 (0)	7 (100)	0.000	0.999	0.000 - ∞
Primary	9 (13.6)	57 (86.4)	3.857	0.006	1.486 - 10.012
Secondary	66 (26.5)	183 (73.5)	2.581	0.003	1.376 – 4.840
University	27 (43.5)	35 (56.5)	1		

DISCUSSION

This study was aimed at investigating Female Sex Workers' knowledge on cervical cancer, attitudes and practices towards cervical cancer prevention in two Municipalities in Douala. Findings from this study could be of Public Health importance and provide information which may inform the designing and implementation of health promotion and prevention strategies. This might in turn improve on the health of Female Sex Workers (FSWs) and curb the incidence of cervical cancer in this group who are particularly at high risk of HPV infection and cervical cancer [23], and in women in general.

Results of this study revealed that most of the study participants were less than 30years, this may be due to the fact that many young girls have abandoned school due partly to the crisis in North West and South West Region of Cameroon to settle in nearby towns like Douala. A similar study in Nepal reported that majority of participants were in the age group 20-29 years, were married and had secondary level of education [24]. Majority of our participants, were aware of cervical cancer, and more than half of them got the information from the media. This study was conducted in Douala, an urban area where electricity, media and internet are available, this might have influenced their level of awareness about cervical cancer. In Ghana, Ebu et al [25] reported a similar finding where more than half the women had heard of cervical cancer. This finding is also consistent with the study by Ayelign et al. [26] carried out on knowledge and attitudes

regarding cervical cancer among reproductive age group women in Gondar Town, North West Ethiopia where more than half (65.1%) of the participants had heard of cervical cancer. Slightly above one third of the participants had adequate knowledge on cervical cancer. This may be as a result of their educational level since more than half of the respondents in our study had attained just secondary level of education. This finding is in accordance with that of a similar study carried out, which showed that approximately 40% of the study participants had good knowledge on cervical cancer [27]. However, majority of their respondents had attained only primary level of education. Also, this finding is consistent with the finding of a previous study which showed that majority of the participants (87.4%) had inadequate knowledge on cervical cancer prevention [28].

Knowledge on risk factors was poor; less than half of the participants reported that multiples deliveries and sexually transmitted infections where the major risk factors of cervical cancer. This poor knowledge on the risk factors can be attributed to the fact that majority of the respondents had attained just secondary level of education. This finding is contrary to the finding of a similar study conducted by Hug et al. [29] on the experiences of a 'screen and treat' cervical cancer prevention programme among brothel-based female sex workers in Bangladesh. Their finding showed that 50% of the study participants reported multiple deliveries and sexually transmitted diseases as the major risk factors of cervical cancer. In

the same light the finding concurs with that of a related study, where 30.54% of the participants said that sexually transmitted disease is a major risk factor for cervical cancer [26].

Regarding signs and symptoms of cervical cancer, the most frequent symptoms reported by more than half of the participants was dysfunctional uterine bleeding while post coital bleeding was reported by slightly less than half of the participants. This could be explained by the fact that most female sex workers knew that occurrence of bleeding when there is no menses is a cause for concern. This findings are in contrast with the study conducted by Pieters et al.[28] where majority of the respondents said that sexually transmitted infections were the main symptoms of cervical cancer. In addition, our findings are in contrast with that of a study carried out in North Korea in which less than 40% of the participants were aware of the symptoms of cervical cancer [30]. Less than half of the participants agreed that colposcopy is a major screening method for detecting cervical cancer. It could be that these were the few participants who had done their cervical cancer screening at the hospital, and in this study most of the participants had not attained university education.

Furthermore, our study revealed that less than half of the participants reported that screening for cervical cancer should be done at puberty. This can be explained by the fact that most FSWs knew that most girls become sexually active at puberty and it will be beneficial for them to be screened. Respondents who had attained just primary education were almost about nine times less knowledgeable than those who had attained university education (crude OR = 9.392; 95% CI: 3.719-23.718, $p = 0.024$). This can simply be explained by the fact that those who had attained a higher level of education might have been exposed to more teachings on cervical cancer, or probably were inquisitive. Our finding is similar to the findings of a study conducted in Lagos by Nforbi and Abdu [31]. Also, students were almost about four-times less knowledgeable than workers (crude OR = 4.785; 95% CI: 1.967-11.636, $p = 0.001$). This was quite an interesting finding, which might be explained by the fact that most workers have attained some level of education and experience too in their respective jobs.

With respect to attitudes towards cervical cancer prevention, our study revealed that less than half of the participants strongly agreed that, they can do cervical cancer screening. This could be as a result of lack of sensitisation, and lack of awareness creation programme

regarding cervical cancer. Our finding is contrary to that of a study carried out on HPV and cervical cancer related knowledge, awareness and testing behaviours among female sex workers [32], where up to 85% reported that they can do cervical cancer screening and 40% reported that they could take the HPV vaccine if it is free. Furthermore, a lesser proportion strongly agreed that it is good to do cervical cancer screening. This response could be due to the fact that most of the respondents had attained just secondary level of education thus, could not fully differentiate dangerous and healthy habits. Our finding is contrary to those of other studies conducted in Nepal and Iraq [24, 33], which reported that women had a positive attitude towards cervical cancer and Pap smear test.

Again, our study showed that less than half of the participants had done cervical cancer screening in the past, and more than half of them did the screening in a hospital. This below average screening could be due to their inadequate knowledge on cervical cancer, as well as lack of sensitisation about cervical cancer screening by health care providers. This finding is similar to that of a study by Petmore et al [34] conducted in Zimbabwe. Most of the participants, had no idea on how often they should go for cervical cancer screening and less than half reported that the main benefit of cervical cancer prevention was that, it saves lives. This might be due to the inadequate knowledge on cervical cancer as demonstrated by the majority of respondents. More than half of the participants reported that cervical cancer screening should be done by a Gynecologist. This was similarly reported by Tadesse et al [33] in a study conducted in Southern Ethiopia. Majority of the participants said that they can recommend someone to do cervical cancer screening and to take the vaccine for cervical cancer prevention, with reason being that cervical cancer vaccine prevents exposure to the disease. This finding is dissimilar to a finding from a study by Pieters et al.[28] where almost all of the participants agreed to take the vaccine. The difference between the two studies might be due to the fact that the participants in the study conducted in Lima, Peru could have been informed about cervical cancer before the actual study.

Our study revealed that about half of the participants did not practice cervical cancer prevention, reason being that cervical cancer is not real. This finding is contrary to the finding of the study of Nforbi and Abdul in Lagos Metropolis [35] where most of the FSWs reported that

they always have regular check-ups while about one third had once had a Pap smear screening. Again, majority of the study participants reported that none of their family members had ever been diagnosed with cervical cancer. Among those whose family member had been diagnosed with cervical cancer, more than half of the participants said it was a sister who was diagnosed with cervical cancer. About half of our study participants had done cervical screening before, this may be because the organisation they are enrolled in carries out cervical cancer screening. This finding is similar to that of a study conducted in Bangladesh on the Experiences of a Screen and Treat cervical cancer among female sex workers where more than half of them had done cervical screening. Majority of their study participants had attained secondary education which is similar to our study [29].

Results from multiple logistic regression analysis revealed that respondents between 40-49 years and 50-59 years of age were about 17-times (crude OR = 17.302; 95% CI: 3.000-99.777, $p = 0.001$) and 21-times (crude OR = 21.466; 95% CI: 2.570-179.296, $p = 0.005$) less likely to have good practice towards cervical cancer prevention than those above 60 years of age. This could be due to the fact that most FSWs above 60 years value their health more than the younger FSWs and some of them may be experiencing health challenges. This finding is in line with the finding of a study conducted in India by Ibe [36] which showed that women in this age group were more likely to visit a health facility. Participants who had attained only primary and only secondary education were 3-times (crude OR = 3.857; 95% CI: 1.486-10.012, $p = 0.006$) and 2-times (crude OR = 2.581; 95% CI: 1.376-4.840, $p = 0.003$) less likely to have good practice towards cervical cancer prevention than those who had attained higher education. This can be explained by the fact that generally, those who have attained a higher level of education are expected to have a good practice than those who have not. This finding was also similar to the finding of a previous study conducted in Northeast Ethiopia [37].

CONCLUSION

This study revealed that Female Sex Workers had inadequate knowledge on cervical cancer prevention. Also, occupation and level of education were significantly associated with the participant's level of knowledge on cervical cancer.

A majority of the participants had poor attitudes towards cervical cancer screening and would not accept to do

cervical cancer screening or even recommend others to do it.

Most of the participants had poor practices towards cervical cancer prevention. Age group and level of education also had a significant association with participant's level of practices regarding cervical cancer prevention.

Limitations of the Study

The study was a cross-sectional study and thus, inference about causal relationship was not possible. However, it presented an insight on FSWs and the efforts made towards cervical cancer prevention. In addition, the sample was a purposive community sampling which might limit the generalization of the findings to the populations of FSWs; however, we used the Municipalities which had the organisation dealing with Female Sex Workers. This enhanced collaboration and participation of the FSWs, hence, our findings could be generalised. Again, this study used a questionnaire to collect data; the disadvantage is that it does not produce rich data; in this case participants' perceptions cannot be fully captured. To compensate for the limitation open ended questions were included and copies of the questionnaire were administered on a face-to-face basis. The data from the close and open ended questions together gave us a broad understanding of the participants' knowledge, attitudes and practices.

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Authors' Contribution

All authors participated in all steps of the study from its commencement to writing. That is, conception and design, acquisition of data, analysis and interpretation of data as well as drafting and revising and approving the final manuscript.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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