



# Socio-Cultural and Demographic Frequencies and Determinants of Prenuptial Sexuality among Adolescent Girls in the City of Mwene-Ditu in DR Congo: A Prospective Analytical Study

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**How to cite this paper:** Kamutambayi, P.M., Tshibanda, A.T., Muamba, C.S., Tshimbangila, J.C.M., Mutombo, M.T., Kabongo, J.K., Tshilombo, E.T. and Tshibangu, F.I. (2023) Socio-Cultural and Demographic Frequencies and Determinants of Prenuptial Sexuality among Adolescent Girls in the City of Mwene-Ditu in DR Congo: A Prospective Analytical Study. *Open Access Library Journal*, **10**: e10502.

<https://doi.org/10.4236/oalib.1110502>

**Received:** July 12, 2023

**Accepted:** August 25, 2023

**Published:** August 28, 2023

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## Abstract

**Introduction:** The behavioural and sexual difficulties faced by adolescents make this transition phase a complex subject that provokes debate. Our objective in this study is to determine the proportion of sexually active adolescent girls and their age at first sexual intercourse in order to look for the determining factors. **Methods:** An analytical study, in the form of a prospective survey on the sexual activity of adolescent girls, was carried out in a few targeted secondary schools (969 students) in the city of Mwene-Ditu over for three months from 01 January to 31 March 2023. A standard semi-open questionnaire was used by interviewing study subjects after prior informed and explicitly obtained consent from each subject included in the study. **Results:** Out of a total of 979 adolescent girls questioned about their sexuality, 649 of them or 66.3% [63.2 - 69.2] had said they had already contracted sexual intercourse with a man at least once and more than half of them before the age of 16 (55.9%) or at an average age of 15.1 years (Sdv: 2.1) and this one to two years after menarche (33.9%) occurred at the age of 13.7 years (Sdv: 1.4), supported by oneself: ORaj: 6.6 [2.1 - 20.6] or by one of older brother/sister: ORaj: 10.7 [4.2 - 27.5] following the socio-economic level of the parents estimated < at the average: ORaj: 5.9 [3.0 - 11.8] because of the professional instability of the parents: ORaj: 2.6 [1.5 - 4.4], legal engagement or

not: ORaj: 62.5 [33.1 - 118.2] with the desire to dress well: ORaj: 15.7 [8.9 - 27.6] were the main determinants. **Conclusion:** Adolescent sexuality is a public health issue in Lomami province. The city of Mwene-Ditu, like many cities, faces this problem. The statistics are alarming enough and require awareness.

## Subject Areas

Public Health

## Keywords

Adolescence, Sexual Activity, Prenuptial, Frequency, Determinant

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## 1. Introduction

Adolescence is an age group between 10 and 19 years, it is a period of transition between childhood and adulthood. It is a period during which the person is subjected to profound physical and psychological, emotional and social changes [1] [2].

In developing countries, with the exception of China, 11% of adolescents aged 15 to 19 report having had their first sexual intercourse before the age of 15 In Cameroon, among girls aged 15 - 19, the proportion of adolescents sexually active before the age of 15 is 11.5 percent compared to 18 percent for adolescent girls [3].

In traditional African societies and DR. Congo, in particular, sexual intercourse is envisaged in the context of the conjugal union. Parents teach girls the values of virginity before marriage, and boys are introduced to virility values.

As a result, adolescent sexuality is subject to greater parental and societal control. This socialization aims to make the girl a wife/mother, and the boy a father/head of household [4].

Currently, the environment in which adolescents live has changed. Population growth has led to an increase in the number of the juvenile population; the processes of urbanization and modernization have seriously disrupted the traditional environment of adolescents and their connection with society; the traditional mores marking the transition from childhood to adulthood have been disorganized, leading to puberty at an earlier age, with the postponement of the age of entry into the union and the decrease in the influence of parental power [5] [6] [7].

It is in this context that this work is taking place, the objective of which is to determine the frequency of sexually active girls as well as the age that they contracted their first sexual relations outside marriage union and the determinants in the city of Mwene-Ditu.

## 2. Methods

Our study took place in a semi-urban environment in five secondary schools in the commune of MUSADI, in the town of MWENE-DITU, LOMAMI Province, DR Congo. This is a prospective, analytical study, targeting girls between the ages of 10 and 19, was carried out in five targeted secondary schools (969 students) in the city of Mwene-Ditu over a period of one year from 01 January to 31 March 2023.

All 10- and 19-year-old girls from targeted schools in the town of Mwene-Ditu consented were included in this study.

Girls who did not agree to participate in the study and did not meet the age range defined here were not included in this study.

A standard semi-open questionnaire was used by interviewing study subjects. Prior informed consent was explicitly obtained from each subject included in the study.

For this research, the variables used according to each type of characteristic are: Sociodemographic variables: age, sex, marital status, level of education; and Socio-cultural variables: communication on sexuality between parents and adolescents, parental control. These were:

- The frequency of sexually active girls outside the marriage union;
- The characteristics of the first sexual intercourse in these girls;
- The social situation of the girls' parents;
- The clinical characteristics of young girls;
- The social situation of young girls;
- The determinants of early sexuality in young girls.

The calculation of the size “n” of our sample is necessary to extrapolate the results to the entire population. Thus, we calculated the sample size using the “STATCAL” calculator of the computer software Epi Info, version 2013 with a power of 90%.

In order to mitigate the risk of non-responders, which may occur in such studies, and not to fall below the normal size that guarantees accuracy in the estimation of parameters, this sample will be reduced to a size greater than 979 obtained.

As for the sampling technique, we used multi-stage probability sampling, which is a technique that makes it relatively easy to compile a sample by combining different sampling techniques in a multi-step process:

For secondary schools:

- In the 1st degree: We randomly selected five districts constituting the municipality of Musadi;
- At the 2nd degree: We proceeded as follows: in each district, we randomly selected a school;
- At the 3rd degree: We considered all the classes within the school.

Thus, a sample of 979 girls who met our inclusion criteria was gathered. Then, the sample was stratified into two groups: one consists of girls already in prema-

rital sexual activity (before entering the marriage union) constituting our study population, and the other is not sexually active.

The data collected were encoded on the spreadsheet of the EXCEL software (Microsoft, USA, 2007) and then imported for processing on the Epi Info 7.2.2.6 software (CDC, USA, 2016). The results were presented in the form of tables and figures containing observed numbers, proportions and parameters of central tendency (mean and median) and dispersions (minimum, maximum and standard deviation).

The comparison of proportions was made using the uncorrected square Khi test and, failing that, the Yates corrected square Khi test. Linear correlation was used to assess the covariation of girls' ages at first sexual intercourse and ages at menarche. The significance of the tests used was set at the 95% threshold.

As in any study, ethical aspects related to respect for the person, beneficence and justice are taken into account and the informed consent of the participants after presentation of the objectives of the study has been obtained. Confidentiality and anonymity were ensured by personal data processing.

### 3. Results

#### 3.1. Frequency

Out of a total of 979 adolescent girls surveyed about their premarital sex, 649 or 66.3% [63.2 - 69.2] of them said they had already contracted sex with a man at least once. (Table 1)

#### 3.2. Features of Adolescent Girls' Premarital Sex Lives in Mwene-Ditu

In Mwene-Ditu, more than half of adolescent girls contracted their first premarital sexual intercourse before the age of 16 (55.9%): thus, 1/4 of them before 14 years, 3/4, before 17 years and 90% at 18.5 years, on average at 15.1 years (Sdv: 2.1). (Table 2)

Almost half (42.5%) of sexually active girls (adolescents) in Mwene-Ditu said they had already contracted sex 2 to 10 times before entering into marriage, a minimum of once and a maximum of more than 20 times. (Table 3)

The majority of sexually active adolescent girls in Mwene-Ditu (33.9%) reported contracting their first premarital sex 1 to 2 years after the onset of their first period with 10.2% before menarche. This difference is significant ( $p < 0.05$ ). (Table 4)

**Table 1.** Number of adolescent girls already sexually active.

Concept of first sexual intercourse outside marriage union	actual	% [95%CI]
No	330	33.7 [30.8 - 36.8]
Yes	649	66.3 [63.2-69.2]
Total	979	100.0

**Table 2.** Age at first sexual intercourse.

Age of first sexual intercourse (years)	Actual (n = 649)	% [95%CI]
≤15	363	55.9 [51.3 - 62.7]
16 - 17	209	32.2 [29.3 - 37.1]
18 - 19	77	11.8 [7.4 - 15.3]
<b>Parameters of age distribution at first sexual intercourse</b>		
M ± ET		15.1 ± 2.1 years
Min et Max		10 years and 19 years
Median		15 years
Fashion		14 years
First Quartile		14 years
Third quartile		17 years
Ninetieth percentile		18.5 years

**Table 3.** Estimated number of sexual intercourse already performed.

Number of sexual intercourse performed	Actual (n = 649)	% [95% CI]
1 time	11	1.7 [0.9 - 3.1]
2 - 10 times	275	42.5 [38.6 - 46.3]
11 - 20 times	99	15.3 [12.6 - 18.3]
>20 times	264	40.7 [36.9 - 44.6]
<b>Distribution parameters of number of premarital intercourse.</b>		
Min et Max		1 et ≥20
Median		14
Fashion		5
First Quartile		5
Third quartile		≥30

**Table 4.** Age at first sexual intercourse according to age at the onset of the first menstrual period in adolescents.

Age at first sexual intercourse compared to the onset of first menstruation	Actual (n = 649)	% [95% CI]
Before the onset of the first menstrual period	66	10.2 [7.1 - 14.5]
Same year with the onset of the first menstrual period	77	11.9 [8.0 - 16.8]
<b>1 - 2 years after menarche</b>	<b>220</b>	<b>33.9 [29.2 - 38.9]</b>
3 - 4 years after menarche	121	18.6 [14.3 - 22.7]
≥5 years after menarche	165	25.4 [21.6 - 29.4]
<b>Distribution parameters of number of premarital intercourse.</b>		
M ± ET		2.8 ± 2.7
Min et Max		3 years before and 10 years after
Median		3 years
Fashion		3 years
First Quartile		1 year
Third quartile		5 years

### 3.3. Socio-Demographic Characteristics

Although the majority of adolescent girls already sexually active had both living parents (74.6% vs. 76.7%) and civil servants (52.5% vs. 53.3%) of average estimated socioeconomic level (54.2% vs. 56.7%) eating at least two meals a day (42.4% vs. 53.3%), only the absence of the mother due to death: OR = 5.84 [1.78 - 19.18], eating less than two meals a day: OR = 2.54 [1.70 - 3.81], a strenuous socioeconomic level: OR = 3.95 [2.47 - 6.33], marked by field work (farmer): OR = 1.88 [1.15 - 3.09] have been significantly associated with adolescent premarital sexuality in Mwene-Ditu. (**Table 5**)

**Table 5.** Socio-economic factors associated with adolescent sexuality.

Variables studied	Girls already sexually active		OR [95% CI]	p-value
	Yes (n = 649)	No (n = 330)		
<b>1. Existence of parents</b>				
- Both Parents Alive	484 (74.6)	253 (76.7)	0.89 [0.65 - 1.22]	0.47354
- Deceased father	132 (20.3)	74 (22.4)	0.88 [0.64 - 1.22]	0.44925
- Deceased mother	33 (5.1)	3 (0.9)	5.84 [1.78 - 19.18]	0.00103
<b>2. Number of meals/days</b>				
- 1 meal	143 (22.0)	33 (10.0)	2.54 [1.70 - 3.81]	0.00000
- 2 meals	275 (42.4)	176 (53.3)	0.64 [0.49 - 0.84]	0.00114
- 3 meals	231 (35.6)	121 (36.7)	0.95 [0.72 - 1.26]	0.74074
<b>1. Parent/Guardian Occupation</b>				
- Bucheron	11 (1.7)	3 (0.9)	1.88 [0.52 - 6.78]	0.32759
- No profession	110 (16.9)	109 (33.0)	0.41 [0.30 - 0.56]	0.00000
- Merchant/Seller	55 (8.5)	8 (2.4)	3.73 [1.75 - 7.92]	<u>0.00027</u>
- Farmer	77 (11.9)	22 (6.7)	1.88 [1.15 - 3.09]	<u>0.01077</u>
- Civil servant	341 (52.5)	176 (53.3)	0.97 [0.74 - 1.26]	0.81472
- Bahus badikal	22 (3.4)	5 (1.5)	2.28 [0.86 - 6.08]	<u>0.09042</u>
- Pastor	22 (3.4)	6 (1.8)	1.89 [0.76 - 4.72]	<u>0.16313</u>
- Silleur	11 (1.7)	1 (0.3)	5.67 [0.73 - 44.13]	<u>0.06135</u>
<b>1. Type of inhabited houses</b>				
- In Stubble/straw	132 (20.3)	77 (23.3)	0.84 [0.61 - 1.15]	0.27977
- Clay	253 (39.0)	154 (46.7)	0.73 [0.53 - 0.95]	0.02111
- Block cement	264 (40.7)	99 (30.0)	1.60 [1.21 - 2.12]	<u>0.00107</u>
<b>2. Socio-economic level</b>				
- Painful	143 (22.0)	22 (6.7)	3.95 [2.47 - 6.33]	<u>0.00000</u>
- Low	33 (5.1)	11 (3.3)	1.55 [0.77 - 3.11]	<u>0.21118</u>
- Medium	352 (54.2)	187 (56.7)	0.91 [0.69 - 1.18]	0.47008
- High	110 (16.9)	99 (30.0)	0.48 [0.35 - 0.65]	0.00000
- Very high	11 (1.7)	11 (3.3)	0.50 [0.21 - 1.17]	0.10204

### 3.4. Clinical Profile of Adolescent Girls

In the majority of cases, sexually active adolescent girls had their first period a little late between 14 - 15 years (49.2%) vs. between 12 - 13 years (50.0%) their non-sexually active counterparts either at an average age of 13.7 years (Sdv: 1.4) vs. at 13.4 years (Sdv: 1.5) in a sibling of 4 - 7 children (44.1% vs. 46.7%) with an estimated average of  $7.4 \pm 3.2$  children vs.  $6.6 \pm 3.2$  children in which they occupied the  $\leq 3$ rd place (62.7% vs. 63.3%) or on average 3.5th (Sdv: 2.5) vs. 3.8th (Sdv: 2.9). Only the occurrence of menarche beyond age 13: OR = 2.26 [1.70 - 2.99] and belonging to large families  $\geq 16$  children: OR = 6.72 [0.87 - 51.63] were significantly associated with an active sex life with risks multiplied by 2 and 7 respectively in Mwene-Ditu. (Table 6)

Table 7 shows that there is a significant difference between the age of onset of first menstruation in the two categories of adolescents ( $p < 0.05$ ).

Table 6. Clinical profile associated with adolescent sexuality.

Variables studied	Girls already sexually active		OR [95% CI]	p-value
	Yes (n = 649)	No (n = 330)		
<b>1. Sibling size</b>				
- $\leq 3$	66 (10.2)	44 (13.3)	0.74 [0.49 - 1.11]	0.13840
- 4 - 7	286 (44.1)	154 (46.7)	0.90 [0.69 - 1.17]	0.43968
- 8 - 11	209 (32.2)	88 (26.7)	1.31 [0.97 - 1.75]	<u>0.07485</u>
- 12 - 15	75 (11.6)	43 (13.0)	0.87 [0.58 - 1.30]	0.50308
- $\geq 16$	13 (2.0)	1 (0.03)	6.72 [0.87 - 51.63]	0.03418
M $\pm$ ET	$7.4 \pm 3.2$	$6.6 \pm 3.3$	0.50 [0.21 - 1.17]	
Extreme	1 et 18	1 et 14		
<b>2. Sibling rank</b>				
- $\leq 3$ rd	407 (62.7)	209 (63.3)	0.97 [0.74 - 1.28]	0.84907
- 4 - 7th	165 (25.4)	77 (23.4)	1.12 [0.82 - 1.53]	0.47354
- $\geq 8$ th	77 (11.9)	44 (13.3)	0.88 [0.59 - 1.30]	0.50917
M $\pm$ ET	$3.5 \pm 2.5$	$3.8 \pm 2.9$	KW = 1.7498	0.1859
Extreme	1 et 10	1 et 13		
<b>2. Menarche age</b>				
- 10 - 11	31 (4.8)	32 (9.7)	0.47 [0.28 - 0.78]	0.00302
- 12 - 13	231 (35.6)	165 (50.0)	0.55 [0.42 - 0.72]	0.00001
- 14 - 15	319 (49.2)	99 (30.0)	2.26 [1.70 - 2.99]	<u>0.00000</u>
- 16 - 17	68 (10.5)	34 (10.3)	1.02 [0.66 - 1.57]	0.93262
M $\pm$ ET	$13.7 \pm 1.4$	$13.4 \pm 1.5$	F = 5.5777	0.0184
Extreme	11 et 17	11 et 17		

**Table 7.** Menarche age distribution and adolescent sex life.

Menarche age sexually	Active girl non-sexually	Active girl	File	F/p	K-W/F p
M ± ET	13.7 ± 1.4	13.4 ± 1.5			
Minimum	11	11			
Maximum	17	17			
First quartile	13	13	5.5777	0.0184	0.0042
Median	14	13			
Third quartile	14	14			
Fashion	14	13			

### 3.5. Social Situation of Girls

The majority of sexually active adolescent girls were in high school (100.0% vs. 100.0%), residing (77.7% vs. 84.2%) and in parental care (57.6% vs. 66.7%), legally or illegally engaged (94.9% vs. 46.7%) and Protestant (54.2% vs. 56.7%). Only secondary education: OR = 2.47 [1.86 - 3.27] the assumption of responsibility for studies by the big (e)/sister: OR = 3.73 [1.75 - 7.92] or by uncle/aunt: OR = 9.91 [2.37 - 41.0], residing with the great/sister: OR = 5.5 [1.95 - 15.48] or uncle/aunt: OR = 3.58 [1.68 - 7.62] and being legally engaged or not: OR = 21.3 [14.14 - 32.2] without religious affiliation: OR = 7.25 [0.95 - 55.40] were significantly associated with the active sex lives of adolescent girls in Mwene-Ditu. (Table 8)

### 3.6. Research on Determinants of Sexuality in the City of Mwene-Ditu

Residing outside the paternal roof: ORaj: 5.22 [2.76 - 9.88], after the death of the mother: ORaj: 2.89 [1.20 - 6.98], access to secondary education: ORaj: 1.96 [1.47 - 2.59] by supporting oneself: ORaj: 5.58 [1.95 - 15.48] following the socio-economic level of the parents estimated < average: ORaj: 3.35 [2.15 - 4.99], Kimbanguist/New Apostolic/Muslim affiliation or non-religion: ORaj: 3.90 [2.04 - 7.45], legal or non-legal engagement: ORaj: 21.3 [14.14 - 32.2] after the onset of the first menstrual period beyond the age of 13: ORaj: 2.19 [1.67 - 2.87] were the main determinants of sexuality among adolescent girls in Mwene-Ditu with bivariate logistic regression. (Table 9)

Residing outside the paternal roof: ORaj: 10.51 [4.16 - 26.54], access to secondary education: ORaj: 1.66 [0.39 - 2.78] supported by oneself: ORaj: 6.57 [2.06 - 20.62] or by one of older brother/sister: ORaj: 10.68 [4.15 - 27.54] following the socio-economic level of the parents estimated < average: ORaj: 5.96 [3.0-11.81], related to parents' professional instability: ORaj: 2.57 [1.49-4.43], belonging to the Kimbanguist/New Apostolic/Muslim religion or not belonging to any religion: ORaj: 19.02 [7.57-47.80], legal or non-legal engagement: ORaj: 62.53 [33.08-118.2] with desire to dress well: ORaj: 15.69 [8.92-27.60] were the main determinants of sexuality among adolescent girls in Mwene-Ditu with multivariate logistic regression. (Table 10)



**Table 8.** Social factors associated with adolescent girls' sexual activity.

Variables studied	Girls already sexually active		OR [95% CI]	p-value
	Yes (n = 649)	No (n = 330)		
<b>1. Level of education</b>				
- Secondary	649 (100.0)	330 (100.0)	2.47 [1.86 - 3.27]	<u>0.00000</u>
1. Difficulty paying for education				
- Yes	297 (45.8)	132 (40.0)	1.27 [0.97 - 1.66]	<u>0.08582</u>
- No	352 (54.2)	198 (60.0)	0.55 [0.42 - 0.72]	
2. Support for studies				
- Father's friend	2 (0.3)	9 (2.7)	0.11 [0.02 - 0.51]	0.00069
- Church	31 (4.8)	35 (10.6)	0.42 [0.26 - 0.70]	0.00058
- Big brother/sister	55 (8.5)	8 (2.4)	3.73 [1.75 - 7.92]	<u>0.00027</u>
- Grandparents	11 (1.7)	14 (4.2)	0.39 [0.17 - 0.87]	0.01691
- Uncles/Aunts	51 (7.9)	10 (3.0)	2.73 [1.37 - 5.45]	<u>0.00313</u>
- Mother	88 (13.6)	32 (9.7)	1.46 [0.95 - 2.24]	<u>0.08151</u>
- Father	374 (57.6)	220 (66.7)	0.62 [0.52 - 0.89]	0.00619
- Self	37 (5.7)	2 (0.6)	9.91 [2.37 - 41.4]	<u>0.00012</u>
<b>1. Place of residence</b>				
- Convent	2 (0.3)	11 (3.3)	0.09 [0.02 - 0.41]	0.00009
- Big brother/sister	41 (6.3)	4 (1.2)	5.50 [1.9 - 15.5]	<u>0.00031</u>
- Grandparents	14 (2.2)	7 (2.1)	1.02 [0.41 - 2.55]	0.97072
- Uncle/aunt	53 (8.2)	8 (2.4)	3.58 [1.68 - 7.62]	<u>0.00044</u>
- Pastor	33 (5.1)	22 (6.7)	0.75 [0.43 - 1.31]	0.30958
- Parents	506 (77.9)	278 (84.2)	0.66 [0.47 - 0.94]	0.02011
<b>2. Clothing</b>				
- Insufficient	286 (44.1)	187 (56.7)	0.60 [0.46 - 0.79]	0.00019
- Sufficient	363 (55.9)	143 (43.3)	1.66 [1.27 - 2.17]	<u>0.00019</u>
1. Bride				
- Yes	616 (94.9)	154 (46.7)	21.3 [14.1 - 32.2]	<u>0.00000</u>
- No	33 (5.1)	176 (53.3)	0.05 [0.03 - 0.07]	0.00000
2. Religion				
- Brahnamist	70 (10.8)	30 (9.1)	1.21 [0.77 - 1.90]	0.40778
- Catholic	143 (22.0)	80 (24.2)	0.88 [0.65 - 1.21]	0.43606
- Kimbanguist	7 (1.1)	0 (0.0)	Indefinite	<u>0.05831</u>
- Muslim	8 (1.2)	0 (0.0)	Indefinite	<u>0.04285</u>
- Without religion	14 (2.2)	1 (0.3)	7.25 [0.95 - 55.4]	<u>0.02557</u>
- New Apostolic	44 (6.8)	10 (3.0)	2.33 [1.16 - 4.69]	<u>0.01513</u>
- Protestant	352 (54.2)	187 (56.7)	0.91 [0.69 - 1.18]	0.47008
- Jehovah's Witnesses	11 (1.7)	22 (6.7)	0.24 [0.12 - 0.50]	0.00005

**Table 9.** Strength of association between premarital sexual activity in adolescent girls and some factors to bivariate logistic regression.

Factors studied	Girls already sexually active		OR aj [95% CI]	p-value
	Yes	No		
The engagement	616	154	21.3 [14.1 - 32.2]	0.0000
Mother already deceased	33	3	2.89 [1.20 - 6.98]	0.0180
Difficulty paying for education	297	132	1.27 [0.97 - 1.66]	0.0861
Education paid for by an older brother/sister	55	11	1.27 [1.39 - 5.20]	0.0034
Self-paid studies	37	2	5.58 [1.95 - 15.48]	0.0013
Wants to have a lot of clothes	363	143	1.66 [1.27 - 2.17]	0.0002
Reside outside of parents: Big brother/sister, aunt/uncle	99	11	5.22 [2.76 - 9.88]	0.0000
Having friends who also indulge in sex life	561	297	0.71 [0.46 - 1.08]	0.1110
Menarche at $\geq 14$	385	132	2.19 [1.67 - 2.87]	0.0000
Socio-economic level of parents < average	176	33	3.35 [2.15 - 4.99]	0.0000
Number of meals $\leq 2$ per day	418	209	1.05 [0.80 - 1.38]	0.7408
Instability of parents' occupation	231	131	0.83 [0.63 - 1.09]	0.1774
Belonging to no religious or Kimbanguist, New Apostolic, Muslim	77	11	3.90 [2.04 - 7.45]	0.0000
Belonging to a large family of $\geq 8$ size	297	132	1.27 [0.97 - 1.66]	0.0861
Influence of the school environment	484	198	1.96 [1.47 - 2.59]	0.0000

**Table 10.** Strength of association between adolescent sexual activity and some factors in multivariate logistic regression.

Factors studied	Girls already sexually active		OR aj [95% CI]	p-value
	Yes	No		
The engagement ( $\times 3$ )	616	154	62.53 [33.08 - 118.2]	0.0000
Mother already deceased ( $\times 0.14$ )	33	3	0.42 [0.13 - 1.33]	0.1402
Difficulty paying for education ( $\times 0.32$ )	297	132	0.41 [0.25 - 0.66]	0.0003
Education paid for by an older brother/sister ( $\times 8$ )	55	11	10.68 [4.15 - 27.54]	0.0000
Self-paid studies ( $\times 1.2$ )	37	2	6.57 [2.06 - 20.62]	0.0012
Desire to have many clothes ( $\times 9.5$ )	363	143	15.69 [8.92 - 27.60]	0.0000
Reside outside of parents: Big brother/Sister, aunt/Uncle ( $\times 2$ )	99	11	10.51 [4.16 - 26.54]	0.0000
Having friends who also engage in sex ( $\times 0.1$ )	561	297	0.08 [0.03 - 0.18]	0.0000
Ménarche $\geq 14$ ans ( $\times 0.5$ )	385	132	1.16 [0.76 - 1.78]	0.4828
Socioeconomic level of parents < average ( $\times 1.8$ )	176	33	5.96 [3.0 - 11.81]	0.0000
Number of meals $\leq 2$ per day ( $\times 1.4$ )	418	209	1.44 [0.89 - 2.34]	0.1390
Instability of parents' occupation ( $\times 3$ )	231	131	2.57 [1.49 - 4.43]	0.0007
Belonging to no religious or Kimbanguist denomination, New Apostolic, Muslim ( $\times 5$ )	77	11	19.02 [7.57 - 47.80]	0.0000
Belong to a large family of size $\geq 8$ ( $\times 0.9$ )	297	132	1.13 [0.76 - 1.68]	0.5515
Influence of the school environment ( $\times 0.8$ )	484	198	1.66 [0.99 - 2.78]	0.0538

## 4. Discussion

### 4.1. Frequency of First Prenuptial Sex

In the present study, out of a total of 979 adolescent girls questioned about their sexuality, 649 or 66.3% [63.2 - 69.2] of them, reported having already contracted sexual intercourse with a man at least once. Although this situation seems general among adolescent girls worldwide, our reported frequency in the city of Mwene-Ditu, seems the highest because in France, 224 out of 1264 girls or 17.7% report it and in developing countries, with the exception of China, only 11% of adolescent girls aged 15 to 19 years claim to have had their first sexual intercourse before 15 years; [8] [9]. While in Kenya the proportion of people who had ever had sex was highest among those aged 18 to 19 (60% and 59% for girls and boys, respectively) [10]. In a study conducted on sexual intercourse among students in the commune of Matoto in Conakry, Guinea, nearly half of the students have had sexual intercourse at least once and nearly nine out of ten students who have had sexual intercourse have had it between the ages of 15 and 19 and without constraint in 77% of cases [11].

### 4.2. Characteristics of the Sexual Life of Adolescent Girls in the City of Mwene-Ditu

In the city of Mwene-Ditu, more than half of adolescent girls contract their first premarital sexual intercourse before the age of 15 (55.9%), 1/4 of them before 14 years, 3/4, before 17 years, or on average 15.1 years (Sdv: 2.1). In Canada, only 4% of Franco-Manitoban adolescent girls have their first sexual relationship before the age of 14, and 20% of students have had it since the age of 14 [12]. Overall, the results of the Canadian survey indicated that 76% of respondents say they have never had penetrative sex. In France, however, only 17.7% of adolescent girls reported having ever had sexual intercourse, one-quarter of whom were 13 years of age or younger [9]. In a study examining the determinants of sexual behavior among Aboriginal adolescents in Taiwan, some of the participants (4.2%, N = 22) had had their first sexual experience between the ages of 13 and 15 and 6 years (1.4%, N = 6) had had such an experience when they were 12 years of age or younger. Among the 15.7% of participants who had ever had a sexual experience, 43.9% (N = 36) [13]. Other covariates were also associated with youth sexual behavior at the bivariate level. For instance, older youth aged 18 - 24 (OR = 0.15 [0.10-0.22]) had significantly lower odds of abstaining compared to their counterparts 15 - 17 [14].

In our series, nearly half (42.5%) of sexually active girls (adolescents) reported having already contracted sex 2 to 10 times before entering into marriage, a minimum of once and a maximum of more than 20 times, a majority (33.9%), 1 at 2 years after the onset of their first period and 10.2% before menarche.

However, many of these teenage girls had their first period a little late between 14 - 15 years (49.2%) vs. between 12 - 13 years (50.0%) their non-sexually active counterparts either at an average age of 13.7 years (Sdv: 1.4) vs. 13.4 years (Sdv:

1.5) in a sibling of 4 - 7 children (44.1% vs. 46.7%) with an estimated average of  $7.4 \pm 3.2$  children vs.  $6.6 \pm 3.2$  children in which they occupied the  $\leq 3$ rd place (62.7% vs. 63.3%) or on average 3.5th (Sdv: 2.5) vs. 3.8th (Sdv: 2.9).

In bivariate analysis of different factors, only the occurrence of menarche beyond 13 years of age: OR = 2.26 [1.70 - 2.99] and belonging to large families  $\geq 16$  children: OR = 6.72 [0.87 - 51.63] were significantly associated with an active sex life with risks multiplied by 2 and 7 respectively.

Although the majority of our sexually active adolescent girls had both living parents (74.6% vs. 76.7%) and state officials (52.5% vs. 53.3%) of average estimated socioeconomic level (54.2% vs. 56.7%) eating at least two meals a day (42.4% vs. 53.3%), it was observed that only the absence of the mother due to death: OR = 5.84 [1.78 - 19.18], eating less than two meals per day: OR = 2.54 [1.70 - 3.81], a strenuous socioeconomic level: OR = 3.95 [2.47 - 6.33], marked by field work (farmer): OR = 1.88 [1.15 - 3.09] were significantly associated with premarital sexuality in Mwene-Ditu. The same is true in a study conducted on factors associated with a high rate of pregnancy among adolescents aged 13 to 19, and 52.1% of cases were due to poverty [15].

The majority of sexually active adolescent girls were in high school (100.0% vs. 100.0%), residing (77.7% vs. 84.2%) and in parental care (57.6% vs. 66.7%), legally or illegally engaged (94.9% vs. 46.7%) and Protestant (54.2% vs. 56.7%). Only secondary education: OR = 1.96 [1.47 - 2.59], the assumption of responsibility for studies by the great/sister: OR = 3.73 [1.75 - 7.92] or by the uncle/aunt: OR = 9.91 [2.37 - 41.0], the fact of residing with the great/sister: OR = 5.5 [1.95 - 15.48] or with the uncle/aunt: OR = 3.58 [1.68 - 7.62] and being legally engaged or not: OR = 21.3 [14.14 - 32.2] without religious affiliation: OR = 7.25 [0.95 - 55.40] were significantly associated with the active sex lives of adolescent girls in Mwene-Ditu town.

### 4.3. The Determinants of Adolescent Sexuality in the City of Mwene-Ditu

Residing outside the paternal roof: ORaj: 10.51 [4.16 - 26.54], access to secondary education: ORaj: 1.66 [0.39 - 2.78], supported by oneself: ORaj: 6.57 [2.06 - 20.62] or by one of older brothers/sisters: ORaj: 10.68 [4.15 - 27.54] following the socio-economic level of the parents estimated < average: ORaj: 5.96 [3.0 - 11.81], related to parental professional instability: ORaj: 2.57 [1.49 - 4.43], legal or non-legal engagement: ORaj: 62.53 [33.08 - 118.2] with desire to dress well: ORaj: 15.69 [8.92 - 27.60] were the main determinants of sexuality among adolescent girls in the city of Mwene-Ditu with bi- and multivariate logistic regression.

In the French study, regarding the associated factors, the frequency of early sexual intercourse is lower among girls living with both parents (13.9% versus 29.8%), as well as among those whose communication is easy with at least one of them (15.5% versus 28.3%). Socioeconomic level was not found to be significantly associated with early sexual intercourse. Vocational high schools have the

highest proportion of 15-year-old girls who have had early sex (26.9% versus 16.2%) [9].

On the other hand, the reasons given by young girls vary widely from one environment to another: in urban areas, love was mentioned in almost two thirds of cases (65%), compared with 14% in rural areas, where the main reasons cited were marital obligation and the promise of marriage, men having a right of sexual access from the time of engagement [16].

However, qualitative interviews reveal that adolescent sexual risk behaviors are influenced by the lack of communication in terms of sex education and economic support of adolescents on the one hand, and the influence of friends, the desire to be like peers, curiosity and images disseminated by the media on the other hand [17].

Parents who should be more involved in their children's sex education are renouncing to assume this responsibility. Peers and the media have become the frame of reference for adolescent sexual counselling and practice, despite the dramatic consequences this can have [17] [18]. While in a study of factors associated with adolescent sexual abstinence in four sub-Saharan African countries, schools, health care providers, churches and other faith-based organizations are important sources of reproductive and sexual health information for adolescents [19].

Sexuality, as a movement towards the other, a tension between oneself and others, has become one of the essential components of sociability; it places the individual in a set of relationships more or less voluntarily chosen and maintained [17].

In addition to this observation, the high frequency of sexually active adolescent girls in the city of Mwene-Ditu is also explained by the break in morals since the period of the entry of the militia of KAMUEN A NSAPU in the years 2016. It thus seems that the first sexual relationship is often the result of the symbolic and even instrumental domination that governs male-female relations. It is also a decisive experience in the appropriation or reappropriation of the body, and the representation that the adolescent has of it.

The first sexual intercourse among girls in Yaoundé is conditioned, not by their own will, but by a set of intrafamilial and extra-familial circumstances that favor it [20].

Thus, the sexual behavior of the individual reflects the values and norms acquired from his social environment and is placed in a given context [4] [21], while in traditional African societies and DR. Congo, in particular, sexual intercourse is considered in the context of the conjugal union [21].

Parents teach girls the values of virginity before marriage, and boys are introduced to virility values [4]. As a result, adolescent sexuality is subject to greater parental and societal control. The purpose of this socialization is to make the girl a wife/mother, and the boy a father/head of household.

In Mwene-Ditu, the environment in which adolescent girls currently live has

changed. Population growth, with the massive arrival of returnees from Katanga in recent years, has led to an increase in the number of the juvenile population on the one hand; the processes of urbanization and modernization have seriously disrupted the traditional environment of adolescents and their connection with society on the other hand; traditional mores marking the transition from childhood to adulthood have been disorganized, leading to puberty at an earlier age, with the age of entry into union being raised and the influence of parental power diminishing. The development of information and communication technologies across cultural and geographical boundaries has helped redefine the sexual freedom of adolescent girls, compounded by the Facebook phenomenon. Unlike previous generations, adolescent girls today have few prohibitions and constraints with regard to sexuality [5] [7].

In DR. Congo, in particular, in the town of Mwene-Ditu; In the field of our study, the most affected population is young girls, a situation that can be understood as an indication of social unrest.

Indeed, the economic difficulties of families in this environment often lead young girls to give themselves to partners two to three times their age, while maintaining relationships with other men. Each of them has a specific role: we find the “rhythmer”, who is physically presentable, the “minus a sustainable future”, and, finally, the “sponsor”, who provides the main financial contribution [20].

In general, it appears that sexual behavior is a function of age. Indeed, the practice of the sexual act is determined by the maturity of an individual. As age increases, the proportion of adolescents who report having had sexual intercourse increases [17].

In France, among the 224 adolescent girls who self-identified as sexually initiated, one-quarter reported having had first intercourse at age 13 or younger [9] and the same proportion at age 14 in the Mwene-Ditu series, *i.e.* more than half of cases at age 15 or younger (55.9%).

Given that the literature supports that there are multiple reasons why adolescent girls engage in sexual activity, it is clear from some researchers that sexual desire is one of the reasons for displaying sexual behavior. Many hormonal changes occur, and powerful feelings arise regarding sexual activity. In addition, there are many signals from peers, parents and the media that young people should seek out sexual activity. Curiosity is also one of the reasons for sexual behavior among young people.

The latter is fed by a panoply of information related to sexuality disseminated on television, on the Internet and in the cinema. On this point, the media effect helps to form the attitude of young people, from an early age, and promotes sexual behavior generally perceived as normal and expected. In Cameroon, sexuality still seems to be a taboo subject shrouded in mystery. Parents are reluctant to discuss such a topic with their children.

Family sex education is almost non-existent. As a result, many young girls

reach sexual maturity without a good knowledge of how their reproductive system works, without any knowledge about sexuality [3] [17]. Age, however, did not significantly differentiate adolescents who had communicated with only one parent on sexual issues and those who had not communicated with their parents on sexual issues [22].

Some adolescents have sex in exchange for financial gratification or gifts that allow them to satisfy their material and financial needs. Sexual activity then becomes a survival strategy, a way to protect oneself from material and financial need.

These are girls who are unable to meet their financial needs and are forced to market their sex to men in a wealthy financial situation [17].

If money is not an important motivation for the first sexual experience, it is nevertheless a major component of their emotional life. The type of survey we used did not allow direct measurement of individual markers of sexual maturation, but allowed for the search for factors associated with early initiation of sexual intercourse.

## **5. Conclusions**

Adolescent sexuality is a global public health issue. The town of Mwene-Ditu in Lomami province, like many towns, faces this problem. The statistics are alarming enough and warrant awareness. According to the limited statistical data available, the proportion of pregnancies contracted in schools varies between 9 and 14 per cent.

Congolese authorities must recognize that specific measures can help young people avoid unwanted and early pregnancy, limit recourse to abortion, and prevent the spread of sexually transmitted infections such as HIV/AIDS.

## **Acknowledgements**

The authors sincerely thank the prefects of 5 secondary schools and the mayor of the commune of MUSADI for allowing them to collect data in their schools, which made this study possible.

## **Authors' Contributions**

Mukadi Kamutambayi designed the study, conducted the data analysis and wrote the manuscript; Tshilombo Tshibanda and Sabwe Muamba contributed to the development of the manuscript and the data collection; Mbuyi Tshimbangila and Tshibangu Mutombo contributed to data collection and analysis;

Kasongo Kabongo, Tshilombo Tshilombo and Ilunga Tshibangu performed the final analysis of the data. All have read and approved the latest version of the manuscript.

## **Conflicts of Interest**

The authors declare no conflicts of interest.

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