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Factors associated with unwanted pregnancies in Congolese women aged 15-49 old: Case of the population of Mossaka (Northern Republic of Congo)

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Abstract

Aims: This study aims to understand the factors associated to unwanted pregnancy in Mossaka's women (North of the Republic of Congo).

Method: This cross-sectional exploratory community survey was design to collect data from a sample of 278 women aged 15-49 old in Mossaka District (Cuvette Department). A pilot study was carried out with 10 respondents and the questionnaire was the main research instrument. The test-retest technique was used to check the reliability of the questionnaire. Data were analyzed using frequencies, percentages, odds ratios using statistical packages for the social sciences (SPSS 26.0) and presented using tables and graphs.

Results: The average age of respondents was 26.73 ± 9.53 old. The prevalence of unwanted pregnancy was 65.4% and that of non-use of modern contraceptive methods among these women was 60.3%. Absence of spouse support (AOR = 5.05; 95% CI: 1.27-20.12; $p < 0.05$), sexual experience between 15-17 years (AOR = 12.72; 95% CI%: 2.95-54.69; $p < 0.01$), active sexual before 15 old (AOR = 9.44; 95% CI: 37 2.10-42.34; $p < 0.01$), ever use modern contraception (AOR = 0.02; 95% CI: 0.004-0.10; $p < 0.001$) were significantly associated with unwanted pregnancy.

Conclusion: Unwanted pregnancies are of high prevalence in Mossaka's women. They are associated with lack of spousal support, active sexual before 15 old and low use of modern contraceptive methods.

Keywords: Unwanted pregnancy, Modern contraceptive method, reproductive age, Mossaka

1. Introduction

According to the World Bank report (World Bank, 2019) ^[1] from 1960 to 2020, humanity has experienced a decline in the birth rate among adolescent girls aged 15 to 19 from 92 to 43 births per 1000 women. For the Republic of Congo (RC), this drop was from 140 to 105 births per 1000 women. But this drop in the birth rate is negatively correlated with unwanted pregnancies (GND) which, on the contrary, have increased to unacceptable levels in sub-Saharan Africa in particular (Uwizeye *et al.*, 2020) ^[2]. GND is a global problem with harmful consequences for mother, child, family and society. They occur without any prior (accidental) planning and where at least one parent was not ready or willing to accept it (Motlagh *et al.*, 2020; Sayehmiri *et al.*, 2019; Jalali *et al.*, 2019) ^[3-5]. They are contracted by all women aged 15-49 old in all countries around the world, regardless of socioeconomic status (Motlagh *et al.*, 2020) ^[3]. For example, of the 210 million pregnancies that occur each year worldwide, approximately 40% are unintended and one in 10 women will end their pregnancy with an unsafe abortion (Sayehmiri *et al.*, 2019) ^[4]. In the Republic of Congo, despite easy access to modern contraceptive methods, a significant proportion of pregnancies (19.8% and 25.9% respectively among adolescent girls aged 16 and 17) are still unplanned, no doubt because the use of traditional methods or the irregular and incorrect use of preventive methods (Ministry of Health and Population, 2021) ^[6]. Such a situation leads to a decrease in the quality of life, mental disorders of the mother, the high rate of contamination with sexually transmitted diseases as well as infant and maternal mortality (Jalali *et al.*, 2019; Nejad *et al.*, 2021) ^[5, 7]. Many authors consider that early sexually active life is related to the GNDs (Baati *et al.*, 2020; Mukendi *et al.*, 2021) ^[8, 9].

If in 2007 the average ages of 23, 19.7 and 19.2 years were mentioned as those for entering into sexually active life respectively in Malaysia, Nigeria and Spain (ChartsBin, 2023)^[10], the Ministry in charge of Health and Population in the Republic of Congo had reported a very early entry (19.8% at age 16) into sexual activity among adolescents (Ministry of Health and Population, 2021)^[6]. According to this report, this sexually active life is correlated with pregnancies that are too early or contracted many times or very close together. Consequently, it is responsible for the majority of direct obstetric complications, causing nearly 70% of maternal deaths. In addition to a sexually active life, a poor attitude to the use of contraceptive methods (CM), a lack of knowledge of CMs, an absence of couple discussion on the use of MCs, a lack of spouse support during the use of MCs, an inability of some women to convince their partners, false beliefs and others are significantly known to predict the occurrence of GND (Motlagh *et al.*, 2020; Tarafa *et al.*, 2022; Haddad *et al.*, 2022)^[3, 11, 12].

However, the concern to avoid GND seems to have existed at all times and in almost all populations. Today, GND is ubiquitous in many couples and is part of birth control, even a normal behavior of couples, with variation in the context and in the purposes pursued (Motlagh *et al.*, 2020)^[3]. In the locality of Mossaka (Department of Cuvette), an absence of birth control, education on sex education to avoid GND, a frequency of contracting GND by women of childbearing age (15 to 49 years) and an infant and maternal mortality rate are worrying situations. But, to date, very little effort has been made and few studies have been conducted on the prevalence and analysis of the factors associated with these GND to the point of arousing scientific curiosity. Based on the principle of the difference of social realities, the results of previous scientific work obtained both in Africa and in other continents cannot be applied to Mossaka. This forms the basis for examining prevalence and determining GNDs among these women of childbearing age. The results will lead to the development of short, medium and long- term strategies to help reduce infant and maternal mortality.

2. Materials and methods

2.1. Study design

This cross- sectional exploratory community study was conducted in Mossaka, in the Cuvette Department located in the northern part of the Republic of Congo (RC). The study took place from March 2 to August 31, 2022. The district of Mossaka is located in the north of the Republic of Congo, more than 400 km from Brazzaville (Capital of RC). It is a rural settlement with some semi- urban enclaves and has a population of 16,700 according to 5th census figures (National Institute of Statistics, 2019)^[13].

2.2. Sample

Women of childbearing age (15 to 49 years old) within the communities were organized into 8 clusters according to the 8 neighborhoods of Mossaka. Briefly, each district constituted a cluster and the formula $n = z^2 \cdot xp \cdot (pq) / m^2$ was applied to extract from each of the clusters a sub- sample of 36 subjects respectively for the central districts and 34 subjects for the peripheral districts. In the end, the sub- samples for the 8 quarters were added to obtain the sample of 278 women of childbearing age. This sample was constituted following a 3- step sampling step.

2.3. Procedure

In accordance with individual rights, respect and discretion, the entire procedure was carried out according to the ethical principles applicable to research on sexual behavior. We sent a letter to the heads of the districts to inform them of the study. Respondents from the respective neighborhoods were invited to attend the first control session facilitated by trained interviewers to familiarize themselves with the questionnaire. No data was collected during this operation. It made it possible to evaluate the practical aspects of the questionnaire and to ensure its feasibility (vocabulary, wording, clarity of instructions, wording errors and resolution time) and its apparent validity. We found that illiterate women and those with a low level of education lacked the appropriate vocabulary to understand certain items. Thus, some items have been adapted for better understanding.

During the second session, the respondents were asked to complete the questionnaire in front of the research staff to answer any questions and doubts. Twenty to 30 minutes were given to complete the questionnaires in a comfortable environment. At the end of the presurvey and the evaluation of the instrument developed, a final version was distributed to the respondents. Data collection took place according to a well-structured program. Respondents were carefully informed of their rights during the study, guaranteeing the anonymity of the results. They also received information about the purpose and design of the study. Informed consent (adults) and assent (minors) were obtained from each participant or legal guardians and participation in all procedures was voluntary.

2.4. Questionnaire

Data were collected using a questionnaire that had four sections. In the first part, we solicited information on the socio- demographic characteristics of the respondents -age, education, marital status and level of study. In the second part, we asked about the characteristics of sexual health in contraception. In the third part, we asked questions aimed at assessing the factors associated with unwanted pregnancies.

2.5. Statistics analyses

The data collected was analyzed using SPSS software version 26 (Statistical Package for the Social Sciences). Socio- demographic characteristics were processed using descriptive statistics and the results were expressed as frequency and percentage. To examine the association between the confounding factors of women in a state of wanted or unwanted pregnancies, we used the Pearson chi- square test, at the 5% risk threshold. Similarly, the risk of association between the predictors of the dependent variable (unwanted pregnancy) was assessed in bivariate analysis using the Chi- square test. Once the risk was noted, a multivariate analysis was performed to determine the raw and adjusted odds ratios. For the multivariate analysis, we used the binary logistic regression model. For all variables, the reference modality (not exposed) was defined using the results of previous work. Checking for goodness of fit was performed using the Hosmer Lemeshow test. Only variables that have a statistically significant effect on the use of modern contraceptive methods were retained in the final model. The results were considered significant at $p < 0.05$.

3. Results & Discussion

3.1. Results

Table 1: Sociodemographic characteristics of women in Mossaka

Variables	N	%	Variables	N	%
Age			Study level		
16-17 old	21	7.6	Unable to read and write	12	4.3
18-19 old	52	18.7	Primary	23	8.3
20-24 old	87	31.3	College	88	31.7
25-34 old	58	20.9	High school	140	50.4
35-49 old	60	21.6	University	15	5.4
\bar{x} ($\pm \sigma$) old	26.73 \pm 9.53		Living conditions		
Marital statuses			With both parents	77	27.7
Single	145	52.2	With her husband	125	45
Cohabitation	25	9.0	With only one parent	38	13.7
Married	104	37.4	Lonely	38	13.7
Divorcee	4	1.4	Average age (years)		
Occupation			Husband	39.02 \pm 10.06	
Student	141	50.7	Single parent	45.95 \pm 11.23	
House worker	76	27.3	Two parents	48.41 \pm 9.13	
Trader	49	17.6			
Factory worker	2	0.7			
Farmer	1	0.4			
Other	9	3.2			

Source: Mabounda Kounga survey, 2022

Average age of women was 26.73 \pm 9.53 years with the majority being in the age range of 20 to 24 years (31.3%) and in the age range of 35 to 49 years (21.6%). The dominant marital status was “single” for a percentage of 52.2% and “Married” for a percentage of 37.4%. The vast majority declared having the 2nd degree secondary level for a percentage of 50.4%. A small percentage of respondents

could not read and write (4.3%). The percentage of female students in the sample was also low (5.4%). About 50.7% said they were pupils/students, 27.3% did housework, 17.6% trade and 0.4% was farmers. Regarding living conditions, the vast majority of respondents said they lived with a husband (45.0%).

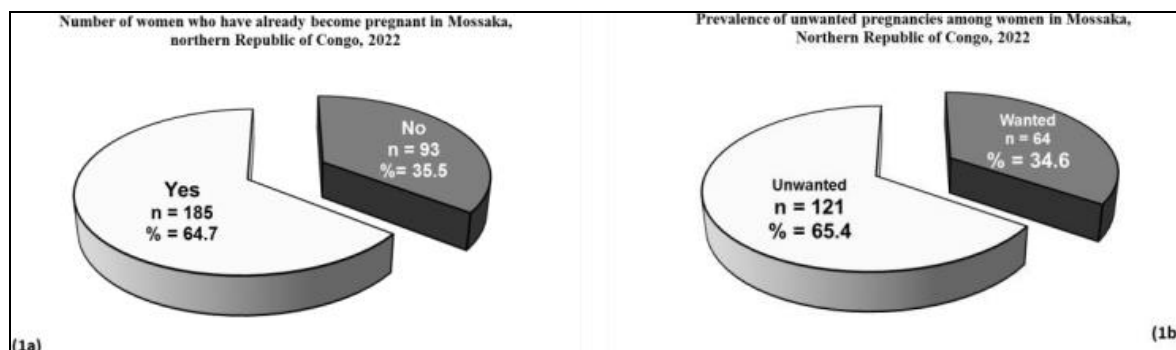


Fig 1: Prevalence of pregnant women and unwanted pregnancies in Mossaka

For a total of 278 respondents, 64.7% declared having already contracted at least one pregnancy (Figure 1a). Among the respondents who had already contracted at least one

pregnancy, 65.4% recognized that at least one declared pregnancy was "unwanted" (Figure 1b).

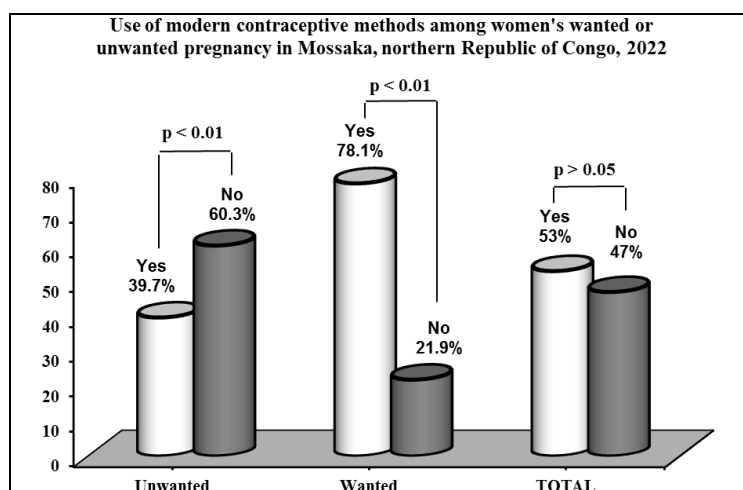


Fig 2: Show use of modern contraceptive methods among women’s wanted or unwanted pregnancy in Mossaka, Northern Republic of Congo, 2022

We observed that modern contraceptive methods were used by 53.0% of the women surveyed. In particular, women who had contracted wanted pregnancies were more likely to use

them (78.1%) compared to women who had contracted unwanted pregnancies (39.7%) who reported low use of modern contraceptive methods.

Table 2: Sociodemographic factors associated with unwanted pregnancies

Variables	Unwanted pregnancy	
	OR crude (CI 95%)	OR ajusted (CI 95%)
Marital statute		
Single ^(réf)	1	1
Cohabitation	4.78 (1.98-11.56) ***	55.76 (10.80-287.99) ***
Maried	4.04 (1.27-12.84) *	16.16 (1.82-143.29) *
Study level		
University ^(réf)	1	1
High school	0.37 (0.11-1.24)	0.87 (0.10-7.00)
College	0.12 (0.03-0.42) **	0.06 (0.01-0.59) *
Primary	0.21 (0.05-0.90) *	4.10 (0.29-56.95)
Unable to read and write	0.63 (0.05-7.36)	0.27 (0.05-1.39)
Habitation area		
Peripheral area ^(réf)	1	1
Center area	0.23 (0.12-0.44) ***	0.21 (0.09-0.48) ***

Source: Mabounda Kounga survey, 2022

Table 3: Other socio-demographic factors associated with unintended pregnancies

Variables	Unwanted pregnancy	
	OR crude (CI 95%)	OR adjusted (CI 95%)
Use of modern contraceptive methods (MC)		
Yes ^(réf)	1	1
No	0.18 (0.09-0.36) ***	0.02 (0.004-0.10) ***
Lack of knowledge of modern MCs		
No ^(réf)	1	1
Yes	0.48 (0.23-1.01) *	1.01 (0.26-3.88)
Lack of spousal support		
No ^(réf)	1	1
Yes	4.76 (2.16-10.50) ***	5.05 (1.27-20.12) *
Sexual experience		
Active after 18 old ^(réf)	1	1
Active between 15-17 old	2,78 (1,59-4,85) ***	12,72 (2,95-54,69) **
Active before 15 old	1,97 (0,88-4,36)	9,44 (2,10-42,34) **
Age au moment de la première grossesse		
> 18 old ^(réf)	1	1
16-17 old	0.22 (0.09-0.53) **	0.14 (0.02-0.80) *
10-15 old	0.78 (0.28-2.12)	1.46 (0.25-8.54)

Source: Mabounda Kounga survey, 2022

The multivariate analysis (table 2, table 3) showed that cohabitation and married women, were almost five (OR = 4.78, 95% CI: 1.98-11.56; $p < 0.001$) and four (OR = 4.04, 95% CI: 1.27-12.84; $p < 0.05$) times at greater risk of contracting an unwanted pregnancy. Even after adjustment on the other explanatory variables, this risk was present (AOR = 55.76, 95% CI: 10.80-287.99; $p < 0.001$ and AOR = 16.16, 95% CI: 1.82-143.29; $p < 0.05$ respectively). Furthermore, ever use of modern contraceptive methods was significantly associated with unwanted pregnancies (OR = 0.18; 95% CI: 0.09-0.36; $p < 0.001$); even after adjusting for the other explanatory variables, this association was present (AOR = 0.02; 95% CI: 0.004-0.10; $p < 0.001$). Women whose spouse hated the use of modern contraceptive methods had nearly five times the risk of contracting an unwanted pregnancy (OR = 4.76; 95% CI: 2.16-10.50; $p < 0.001$) after adjustment for the other variables, the risk hardly varies (AOR = 5.05, 95% CI: 1.27-20.12; $p < 0.05$). We also observed that sexually active women between the ages of 15-17 and under 15 ran respectively twelve (OR a = 12.72, 95% CI: 2.95-54.69; $p < 0.01$) and nine (OR a = 9.44, 95% CI: 2.10- 225 42.34; $p < 0.01$) times greater risk of contracting an unwanted

pregnancy.

4. Discussion

This study consisted of (1) examining the prevalence of GND among Mossaka's women; (2) assess the attitude of these women towards the occurrence of GND; and (3) determine the factors associated with GND in these women. The main results reveal a high prevalence of unwanted pregnancies and both the socio-demographic and women's reproductive health have been identified as the main factors associated with unwanted pregnancy among Mossaka's women. The finding is that these factors influence the high rate of prevalence and unwanted pregnancies extend the existing theories among adolescent girls and adult women in the Republic of Congo as well as all sub-Saharan Africa countries.

This study involved 278 women aged 15-49 old. Among them, 64.7% had already become pregnant and 35.5% had not yet become pregnant. Among 64.7% women, the prevalence of unwanted pregnancies was high (65.4%) and is consistent with the systematic review of various studies, which established that the prevalence of unwanted pregnancies is ranged from 13% to 82% with an average of 35% (Bekele and

Fekadu, 2021; Nyarko, 2019) ^[14,15]. This prevalence in the present study is however higher than the 35.8% and 63.3% observed respectively in Rwanda (Uwizeye *et al.*, 2020) ^[2] and Ethiopia (Ayanaw *et al.*, 2018) ^[16]. However, it is lower than the 71.7% and 79.6% observed respectively in South Africa (Adeniyi *et al.*, 2018) ^[17] and Ethiopia (Birhanu *et al.*, 2019) ^[18]. This similarity to previously conducted studies could be due to the presence of certain socio- demographic, cultural and individual characteristics linking Mossaka's women to those reported in previous studies. For example, a similarity in the culture of a sexually active life in the current study and in the other studies justifies the occurrence of unwanted pregnancies.

Furthermore, we have observed among 65.4% of Mossaka's unwanted pregnancies women that the high percentage of adolescent (45.5%) had a first sexual intercourse before 15 years old. This is in agreement with the results of numerous studies (Nyarko, 2019; Birhanu, *et al.*, 2019; Ahinkorah, 2020) ^[15, 18, 19]. It shows that they were sexually active at an early stage. However, being sexually active very early represents a situation with a high risk of the occurrence of unwanted pregnancies, pregnancies that are too closely spaced and maternal mortality. This 45.5% is higher than the 10.2% reported in Gambia (Ahinkorah, 2020) ^[19], but is consistent with the statement reported in Europe (Zhu ET Bosma, 2019) ^[20] for which, the premarital sexuality of adolescents and young people has serious repercussions on the individual himself, his family and his whole community. These include the increasing cases of unwanted pregnancies, clandestine abortions, complicated childbirth, infant mortality and infection by sexually transmitted diseases.

Concerning the attitude of Mossaka's women towards the modern contraceptive methods use, we observed that slightly more than half of the respondents (53%) were in favor. Accordingly, Mossaka's women who had wanted pregnancies were more likely to use it (78.1%) compared to those who had unwanted pregnancies (39.7%). This low use of modern contraceptive methods among Mossaka's unwanted pregnancies women is similar to the studies carried out in sub-Saharan Africa (Uwizeye *et al.*, Bekele and Fekadu, 2021; Nyarko, 2019; 2020; Ayanaw *et al.*, 2018) ^[2, 14-16]. This low use of modern contraceptive methods therefore explains the high rate of unwanted pregnancies among these women. Furthermore, the high rate of use of modern contraceptive methods among women who had wanted pregnancies is similar to that observed in Ethiopia (Ayele *et al.*, 2018) ^[21]. It explains the low occurrence of unwanted pregnancies among these women of Mossaka.

By examining the factors associated with GND among Mossaka's women, we observed that marital status, level of education and residential area are the factors significantly associated with the occurrence of unwanted pregnancies. This result is in agreement with those found in Ghana (Nyarko, 2019) ^[15], in Democratic Republic of Congo (RDC) (Mukendi *et al.*, 2021) ^[9], in Uganda (Wasswa *et al.*, 2020) ^[22], in Kenya (Ojuok *et al.*, 2022) ^[23] and in Gambia (Barrow *et al.*, 2022) ^[24]. Even after adjustment, these demographic factors remained associated with the occurrence of GND. Accordingly, marital status is a significant risk for the occurrence of unwanted pregnancies among Mossaka's women. This may be explained by (1) the non-use of contraceptives or contraceptive failure (by believing in the absence of taste and serious side effects), (2) the lack of knowledge of family planning (by having a higher proportion low number of contraceptive users in the community, women

may not get enough information from their neighbors about how and when to use family planning) and (3) the importance attached on unwanted pregnancy in relation to their marital status (Birhanu, *et al.*, 2019) ^[18]. Moreover, the low level of education puts the Mossaka's woman at an extremely disadvantageous situation regarding the risk of unwanted pregnancy. The likely reason is that being mostly college-educated, the Mossaka's woman had less ability to take control of their sexual and reproductive health issues compared to their more educated counterparts. Finally, the association with the place of residence can be explained by the fact that Mossaka's women living in the majority in the central districts, were more likely to begin a sexual activity at less than 15 years old compared to the rural women.

In addition, we noticed that ever use of modern contraceptive methods, sexual experience and age at the first pregnancy were significantly associated with the occurrence of unwanted pregnancies. Even after adjustment, these sexual health factors remained associated with the occurrence of GND. This can be explained by the combination of several factors, namely: the challenge sometimes caused by contraceptives, rumors about the reliability of condoms, lack of marital communication, lack of taste, insufficient knowledge, ideas uninformed women perceive contraceptives as a reserve for married couples. These observations coincide with the results of numerous studies carried out in the south of Sarah reporting a significant association between the occurrence of GND and certain factors such as the non-use of contraceptive methods, sexual experience and age at the time of the first pregnancy (Wasswa *et al.*, 2020; Ojuok, *et al.*, 2022; Barrow, *et al.*, 2022; Ayalew, *et al.*, 2022) ^[22-25]. Among Mossaka's women, having had early sexual relations and those having a sexually active life, the occurrence of GND can be explained by the fact that the latter lived for the most in a social environment where they had the free will to choose sexual partners at an early age without too much criticism from parents and peers. This result may also be explained by the fact that these women became pregnant intentionally as a sign of love and commitment to their sexual partners.

5. Conclusions

This study showed that there is a high prevalence of unwanted pregnancies in Mossaka District. The negative attitude of these women towards the use of contraceptives, the lack of knowledge about modern contraceptive methods, the fact that the husband hates the use of modern contraceptive methods, the desire to be pregnant and life sexually active at an early age favored the occurrence of GND. Marital status of free union or married, low level of education, residence at the Mossaka center, non-use of contraceptives, sexual experience and age at the time of first pregnancies were significantly associated with GND in Mossaka women. The results of this study should be completed on a larger sample of the districts of the Republic of the Congo with a view to the future, in particular concerning adolescent girls under the age of 15, too often overlooked in studies on pregnancy unwanted.

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