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International Journal of Family & Community Medicine

Research Article

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Use of prenatal contacts by pregnant women in the Republic of Congo

Abstract

Introduction: According to the WHO, antenatal contact increases the likelihood of a favourable pregnancy outcome by 87%. The aim of this study is to assess the use of antenatal contacts in the Congo.

Methodology: This cross-sectional survey was conducted from September to December 2021 throughout the Republic of Congo. The data were analysed using R Studio© version 4.2 software. Quantitative variables were expressed as means and standard deviations and qualitative variables as frequency. The significance level was set at 5%.

Results: Out of a total of 1,797 pregnant women and 64 health facilities, the average age of the women was 26 ± 6 years, and 94% of them had had at least one prenatal contact. For 75.5% of women, the first contact occurred more than 3 months earlier, and the number of prenatal contacts was four or more in 21.42% of cases. There was low coverage of Intermittent Preventive Treatment during pregnancy with sulfadoxine-pyrimethamine (IPT g-SP) and a lack of immunisation against neonatal and maternal tetanus (30.9% and 16.6% respectively). Of the 912 women surveyed to calculate coverage rates for Intermittent Preventive Treatment during pregnancy with sulfadoxine-pyrimethamine (IPT g-SP), 30.9% had good coverage. There are 16.6% of women not immunised against neonatal and maternal tetanus. The centres are geographically accessible to most of the women surveyed (74.7%). Of the 912 women surveyed to calculate coverage rates for Intermittent Preventive Treatment during pregnancy with sulfadoxine-pyrimethamine (IPT g-SP), 30.9% had good coverage. The proportion of women not immunised against neonatal and maternal tetanus was 16.6%. Of the 64 health facilities surveyed, public facilities accounted for 89.1%. The activity package consisted of curative consultations, antenatal care, iron and folic acid supplementation, all at a rate of 64%. These were followed by consultations, family planning (60%) and vaccination (60%). Prevention of mother-to-child transmission of HIV (PMTCT) is provided at 53%.

Conclusion: The rate of use of antenatal contacts remains high in the Congo, but the package of activities required to meet the health needs of pregnant women is inadequate and exposes them to the risk of maternal and foetal morbidity and mortality. There is therefore an urgent need to improve the completeness and quality of antenatal care in order to prevent maternal and foetal mortality.

Keywords: prenatal contact, pregnant women, use, Congo

Volume 7 Issue 6 - 2023

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Received: October 11, 2023 | **Published:** November 02, 2023

Introduction

Prenatal contact is one of the public health interventions recognised as being one of the four pillars for reducing maternal and neonatal mortality, the other three being family planning, safe and healthy childbirth and essential obstetric care.[1] In fact, it enables health problems to be detected and the mother and foetus to be monitored, as well as preventing childhood illnesses by vaccinating the mother.[2] International bodies advocate the introduction of adequate coverage of high-quality antenatal care for both mother and child, with an emphasis on the provision of care throughout pregnancy, childbirth and the post-natal period.[3,4] Despite national and international initiatives, the statistics are still alarming and lessons need to be learned from experience. Neonatal health is an area where epidemiological, economic and socio-cultural factors intersect, and these factors do not facilitate the strict application of national and international recommendations.[5] The quality of mother and child care remains a challenge for low- and middle-income countries, as high-quality interventions that reduce maternal and neonatal mortality require care provided by qualified personnel.[6] The rationale for introducing the refocused antenatal consultation was that frequent consultations do not necessarily improve pregnancy outcomes. In addition, in developing countries they are often logistically and financially impossible, and many women identified as "high risk" rarely develop complications, while those thought to be "low risk" often do.[7] Refocused antenatal care has not been shown to be effective. In the new WHO model of antenatal care, the number of antenatal contacts is increased from four to eight. Recent evidence suggests that increasing the frequency of antenatal contacts in the health system for women and adolescents is associated with a lower likelihood of stillbirths, as these consultations provide more opportunities to detect and manage potential problems.[4] In the Congo, the probability of dying from maternal causes between the ages of 15 and 49 was estimated at 0.036 in 2005 and 0.020 in 2012.[8] There was therefore a clear downward trend in maternal mortality indicators, attributable essentially to improvements in the living conditions of the population and the healthcare system. With the advent of Covid 19 in 2020, disrupting these parameters, we wanted to assess the use of antenatal contacts to reduce maternal mortality.

Methodology

Study design

This is a descriptive cross-sectional study, running from September to December 2021 in all the integrated health centres (IHCs) in the health districts of the Republic of Congo. This study is part of an earlier study looking at the factors associated with low coverage of sulfadoxine-pyrimetamine chemoprophylaxis among pregnant women in the Congo.

Study framework

The survey was carried out in households and in public and private health facilities (FOSA) offering both standard minimum packages of activities and extended packages of activities. These health centres represent the first link in the healthcare chain, the interface between the healthcare system and the population.

Population

Two distinct populations were targeted by this study. The first was women of childbearing age, aged between 14 and 49, who were at least three (3) months pregnant **or had given birth within the previous six months at the time of the study.** The second population was made up of the health facilities visited by the women surveyed.

Selection: inclusion and exclusion

The inclusion criteria for the women were: age between 14 and 49, at least 3 months pregnant, **or six months pregnant at the time of the study,** living in the survey area for at least 6 months, willing to participate freely in the study, and able to answer the questions.

As a criterion for non-inclusion, we note any woman whose use of sulfadoxine-pyrimetamine

The health facilities were recruited at their convenience and according to the availability of the heads of the IHCs in the health districts involved.

Sampling and sample size

The stratified sampling technique in WHO-type urban and rural clusters, with a total of 30 in each cluster, was used. The sample size consisted of all women included in the study of factors associated with low coverage of sulfadoxine-pyrimetamine chemoprophylaxis among pregnant women in the Congo. It was estimated in each stratum on the basis of the prevalence of 7.5% of the third dose of IPTg-SP coverage in 2018 in Congo.[9]

The calculation is based on Daniel Schwartz's formula below:

$$N = (u_\alpha)^2 \frac{\pi y(1-\pi y)}{\Delta^2} x\ C$$ with:

N= size of the sample to be examined;

u_α = reduced deviation for the statistical risk taken (alpha= 5%, u_α =1,96);

πy = assumed frequency of the phenomenon studied. It is estimated at 7.5%;

$1-\pi y$ = complementarity of the proportion of the phenomenon studied;

Δ = precision with which we wish to estimate the frequency of the phenomenon in the population (0.03);

C = correction coefficient for the cluster effect, set at 3 in our study.

This gave a sample size N of 888 for each stratum. The number of statistical units to be interviewed in each cluster was 888/30 = 29.6, giving a cluster size of 30 women. The sample size of women to be enrolled in the survey was therefore set at 1,800. The sampling interval (SI) was calculated for each stratum by dividing the total population by the number of clusters (30):

I.E.= _P_ (G = number of clusters)

G

Thus, for the urban stratum, an EI of 134,065 was obtained and an EI of 52,140 for the rural stratum. From the table of random numbers, a number was randomly drawn to identify the location of the 1st cluster in each stratum. For the urban cluster, this number is 121,310 and 12,056 for the rural stratum. The other cluster numbers were chosen by adding the number identified to that of the previous EI cluster. For reasons of efficiency, the cluster was mainly assimilated to a neighbourhood in each of the localities or boroughs identified. A random sample of 1800 women was taken from this population. Once the database had been cleared, the final sample size was reduced to 1797 women and a total of 64 health facilities.

Data collection

Two data collection tools were used, two questionnaires dedicated respectively to women and health facilities. In the health facilities, the head of the antenatal care service was asked to respond to the survey, while the women were interviewed in their households.

Data analysis

The data were analysed using R Studio© version 4.2 software. Quantitative variables were expressed as means and standard deviations and qualitative variables as absolute and relative frequencies. The significance level was set at 5%.

Ethical and administrative considerations

The informed consent of each woman interviewed was required prior to any interview. The confidentiality of the information was guaranteed by the anonymity of the data collection media. From an administrative point of view, an information note on the organisation of the survey was sent to local authorities and departmental health directorates by the Ministry of Health. The Ministry also issued an official press release informing the public about the organisation of the survey and inviting them to take part.

Results

The women were aged between 14 and 49, with an average age of 26 ± 6 years. The majority were under 30 (67.3%). 15% of the women were under 20, including teenagers under 18 (10.8%). Out of a total of 1,671 women surveyed, more than half were living common-law (58.7%), while 26.6% were single and only 14.7% were married. In terms of education, most of the women had attended school (1,529 cases, or 91.5%). Furthermore, 15% of women with schooling have at least one university degree, while 12.6% have no qualifications at all. In terms of employment, 68.4% of women are engaged in various activities. However, there are 414 housewives and pupils/students (24.8%). Other women (6.8%) have no activity at all (Table 1).

Pregnant women make plenty of prenatal contacts (Figure 1), but start late (Figure 2). The majority of pregnant women have had two contacts (25.3%), followed by those with four or more contacts

Citation: Jean-Alfred M, Ange Clauvel N, Gilbert N, et al. Use of prenatal contacts by pregnant women in the Republic of Congo. *Int J Fam Commun Med.* 2023;7(6):182–186. DOI: 10.15406/ijfcm.2023.07.00337

(21.42%) and then just one (20.18%). Although the health centres are geographically accessible to most of the women surveyed, 25.2% of them live more than 5 km from the health facility where they receive antenatal care (Figure 3). In terms of travel time, 23.4% of respondents had easy access to their health facility (less than 15 minutes). They can get there in less than a quarter of an hour, and half an hour is essential for around 31.3% of them. Around 22.7% of these women travel between 30 and 44 minutes. However, almost 22.4% of women travel more than 45 minutes (Figure 4).

Table 1 Socio-demographic characteristics N= 1671

	n	%
Marital status		
Common-law union	981	58,7
Single	444	26,6
Brides	246	14,7
Level of education		
Schoolchildren	1529	91,5
Out of school	142	8,5
Professional status		
Professional activity	1143	68,4
Housekeeper, Pupil-Student	414	24,8
No activity	114	6,8

Figure 1 Proportion of women surveyed per antenatal visit during pregnancy.

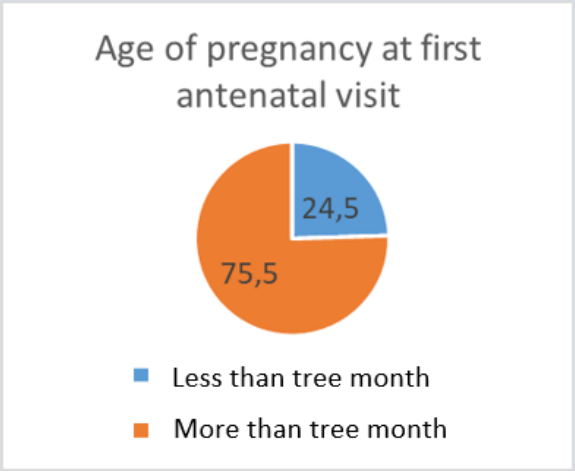

Figure 2 Proportion of women surveyed by gestational age at first antenatal visit.

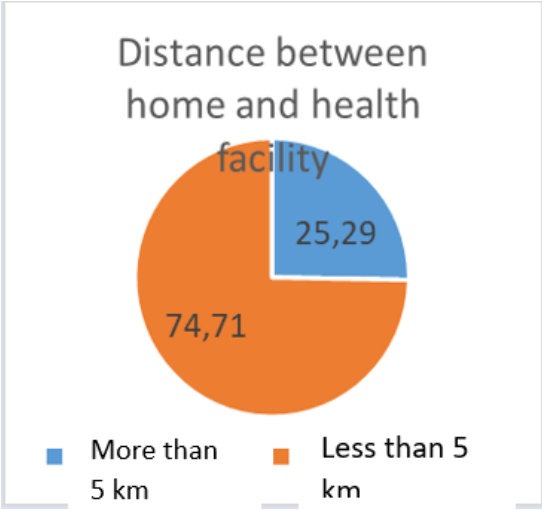

Figure 3 Proportion of women surveyed by distance between home and health facility.

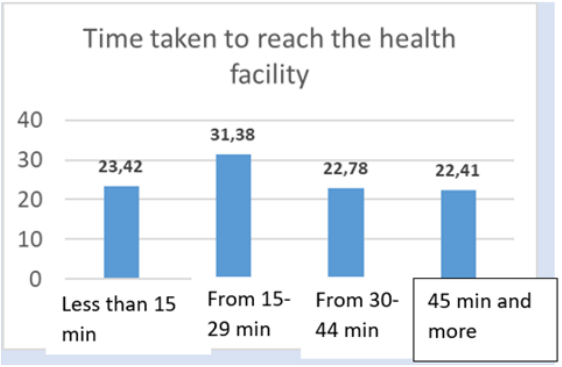

Figure 4 Proportion of women surveyed by time taken to reach the health facility.

In terms of pregnancy, the majority of women surveyed were first-time mothers (25.9%), followed by those who had already borne two children (23.9%) and three children (19.5%). Most of the women surveyed were primiparous (25.4%), followed by 2ème and 3ème pares, who accounted for 23.5% and 17% respectively. An analysis of parity according to women's place of residence shows that the proportion of grand multiparous women has doubled, from 5.7% in rural areas to 1.38% in urban areas. Most of the women surveyed were single mothers (40.8% in rural areas and 40.4% in urban areas).

A sub-sample of 912 women was selected to calculate coverage rates for intermittent preventive treatment during pregnancy with sulfadoxine-pyrimethamine (IPT g-SP). We found that 30.9% of the women surveyed had good coverage. All the others (69%) had poor coverage (Figure 5, 6).

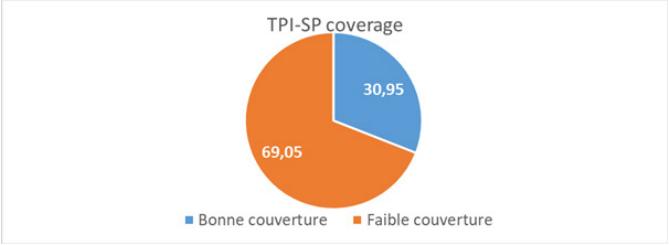

Figure 5 Proportion of women surveyed by IPT-SP coverage.

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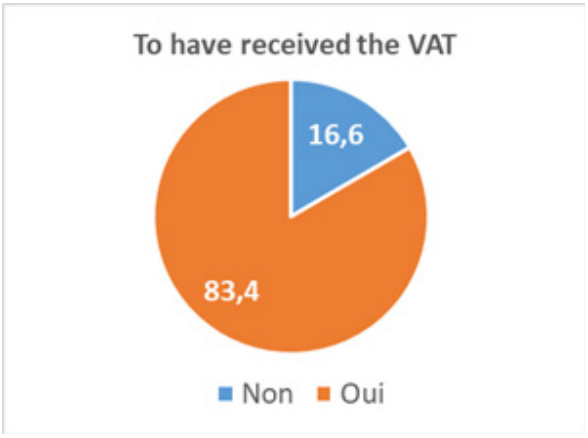

Figure 6 Proportion of women surveyed who had received VAT

Tetanus vaccine (TT) was administered to 83.4% of participants. However, there was still a significant proportion (16.6%) of women not immunised against neonatal and maternal tetanus. In terms of the doses of vaccine received, the results show that 30.6% of women received a single dose of VAT. Thus, only 69.4% of the women surveyed had received at least two doses of TT as recommended for effective coverage against maternal and neonatal tetanus (Figure 7).

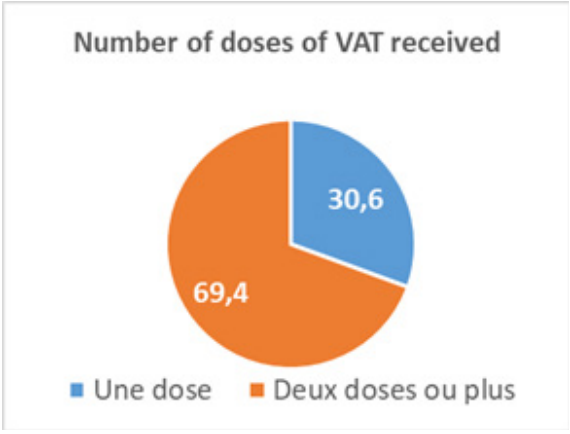

Figure 7 Proportion of women surveyed by number of doses of VAT received

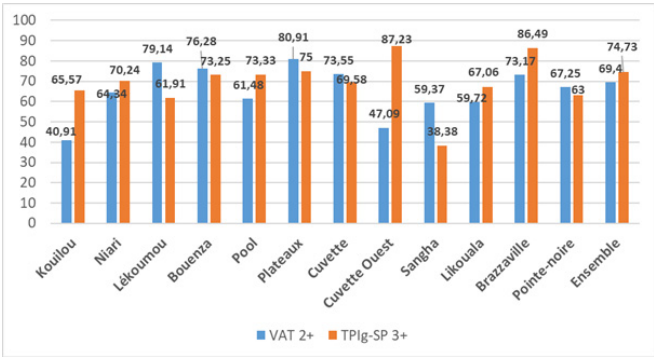

Figure 8 IPTg-SP and VAT coverage rates by department.

An examination of the coverage rates for VAT 2 (two doses or more) and Intermittent Preventive Treatment during Pregnancy with three doses of sulfadoxine-pyrimethamine (IPTp-SP 3) by department reveals a number of similarities. The low coverage rates for VAT 2+ are observed in the Kouilou and Cuvette-ouest departments, while the low coverage rates for IPTg-SP 3+ are observed in the Sangha and Lékoumou departments. The number of doses of SP administered varies from 1 to 6. In 6 of the 12 departments, it varies from 1 to 3: Kouilou, Lékoumou, Plateaux, Cuvette-Ouest, Sangha and Likouala. Figure 8 shows the distribution of SP doses administered, by department.

Overall, women were satisfied (66.75%) with the services offered by the health facilities they attended for antenatal contacts. However, there were disparities: some women said they were not very satisfied (11.38%) and others were dissatisfied (4.71%). And 8.33% said they no longer wanted to use the same health facility for antenatal care during their next pregnancy.

A total of 64 health facilities were surveyed throughout the country. The most common facilities were public (89.1%), followed by private for-profit (7.8%) and not-for-profit faith-based (3.1%), and antenatal care was provided in public facilities (89.1%), followed by private for-profit (7.8%) and not-for-profit faith-based (3.1%). The health facilities visited by the women surveyed offered the packages of activities expected of integrated health centres: curative consultation, antenatal care, iron and folic acid supplementation, all at a rate of 64%. This is followed by family planning (60%) and immunisation (60%). Lastly, Prevention of Mother-to-Child Transmission of HIV (PMTCT) is provided in 53% of health facilities.

The professional qualifications of the health workers responsible for providing antenatal care in the health facilities were: midwives (62.5%), state-qualified nurses (12.5%), health assistants (12.5%), doctors (7.8%), technical health workers (3.1%), auxiliary nurses (1.6%).

Discussion

The average age of pregnant women at prenatal contact is 26±6 years, which is the optimal period for procreation. However, in the Congo, more than half of them live in common-law unions because of the onerous logistical conditions for marriage. Most of the women have attended school because of the high literacy rate, and they are more often than not employed in odd jobs. In Mali, on the other hand, the same age bracket is reported, with a higher frequency of marriage, due to the easier conditions for getting married, with a lower schooling rate, and the household being the woman's main activity.[10]

The level of education is a criterion for good acceptance of antenatal contacts: 48% of women had lower secondary education. The role of antenatal contacts is to prevent, detect early and manage complications that could affect the health of the mother and the unborn child, and also to support the woman and her family throughout the pregnancy.[11,12] Failure to comply with norms and standards in terms of prenatal contact is a factor in poor prognosis and maternal death.[13] According to WHO recommendations on antenatal coverage, it is 98% of women in developed countries and 70% in African countries.[14] In the Congo, the coverage rate is 94%, with very poor quality. It is recognised that the quality of antenatal care can reduce perinatal mortality and morbidity.[12,15] It is assessed on three dimensions: the number of contacts, the timing of the initiation of care, the inclusion of all components of recommended care,[16] and also the qualifications of the practitioner. However, for the majority of women, the first contact takes place after 3 months (Figure 2), even though it is recognised that antenatal services make it possible to detect certain major risks for which action is possible, to prevent or manage certain conditions likely to threaten the health of the mother and child, and to advise, support and inform pregnant women and their families.[17]

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Because of the increase in perinatal mortality when the woman had only four prenatal contacts, according to WHO recommendations, increasing the number of prenatal contacts improves the prognosis and recommends a minimum of eight contacts. In addition, intermittent preventive treatment with pyrimethamine sulphadoxine must be started at 13 weeks, HIV serology is mandatory, and hyperglycaemia detected for the first time during pregnancy is considered gestational diabetes.[18]

The number of antenatal contacts throughout the pregnancy was very low, as was the low coverage of intermittent preventive treatment with sulfadoxine-pyrimethamine. Most antenatal contacts were carried out by the midwife, although she is only authorised to monitor normal pregnancies, and the low level of contacts by the doctor may argue in favour of poor quality. We also noted that 16.6% of women are still not immunised against neonatal tetanus. All these factors argue in favour of poor prenatal contact, even though health facilities (FOSA) are close to pregnant women, who travel only short distances to reach them.

The antenatal care interventions proposed to reduce maternal mortality consist of reducing the likelihood of a woman becoming pregnant, reducing the likelihood of a pregnant woman suffering serious complications during pregnancy or childbirth, and reducing the likelihood of a woman dying from complications.[19] 89.1% of antenatal contacts were made in public facilities where free or low-cost care is available. As a result, iron and folic acid were administered to 64% of women; 60% of family planning cases and 53% of prevention of mother-to-child transmission of HIV cases were carried out.

Women of low socio-economic status are at greater risk of having inadequate antenatal care. This is because of difficulties in obtaining antenatal screening examinations,[20,21,22] delays in the management of complications and increased perinatal and maternal mortality.[23]

The limitations of our study were the failure to assess the use of systematic deworming during prenatal contacts, and, in certain specific cases, the administration of acetylsalicylic acid or calcium as recommended by the WHO. This work will make it possible to assess the use at national level of antenatal contacts, which are one of the weapons in the fight against maternal mortality.

Conclusion

Although antenatal surveillance coverage is good, the practice of prenatal contact is far from meeting the World Health Organisation's current recommendations in this area, due to shortcomings in quantity and quality. As it stands, antenatal contacts are far from fulfilling their role as a pillar in the fight against maternal and neonatal mortality. Given their complexity and the difficulties involved in implementing them, it is useful to periodically evaluate the performance of antenatal services with a view to improving them.

Acknowledgments

None.

Conflicts of interest

The author declares there is no conflict of interest.

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