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Self-medication and safety profile of conventional and traditional drugs consumed by pregnant women in three hospitals in the city of Yaounde, Cameroon

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Abstract

Objective: To assess the effects of self-medication during pregnancy.
Methods: This descriptive cross-sectional study took place from April to June 2021 in the city of Yaounde-Cameroon. The Central Hospital, the Hospital of the Cameroonian Presbyterian Church of Djoungolo and the Social and Health Center of Nkolndongo were selected. Pregnant women who came as outpatient consultations were interviewed. The data collected concerned socio-demographic variables and the practice of self-medication.
Results: A total of 280participants were recruited, with a mean age of 28 years and most of them had higher education levels. More than half of the participants were in the third trimester of pregnancy and 80.71% of these women had not prepared their pregnancy. Married women made up just over a third of the population. Self-medication with conventional and traditional medicines is practiced by thirty-five percent of the population. The medicines used belonged to categories B (81.31%), A (6.59%) and C (6.59%). Paracetamol was the most used medicine; *Zingiber officinale* and *Aloes vera* were the most used phyto-medicines in traditional medicine.
Conclusion: Self-medication during pregnancy involved both conventional and traditional medicines. The latter present a potential risk for the pregnant woman as well as for the fetus.
Keywords: Self-medication, Traditional medicines, Pregnant women; Yaounde -Cameroon.

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1. Introduction

During pregnancy, the pregnant woman, whether she is ill or not, is likely to take medicines. This consumption of medication may be for preventive or curative purposes [1]. However, some women take medication without a prescription or without medical advice: this is self-medication [2]. Self- medication is an attitude where an individual tries to solve his or her health problem without having the necessary knowledge or without the advice of a health professional [3]. Self-medication includes both conventional and traditional medicines [4]. In developing countries, self-medication is widely used because of the weakness of the health system, which forces some people to opt for self-medication in the form of modern or traditional medicine [5]. This practice has been the cause of many adverse drug events [6]. Self-medication during pregnancy exposes the mother and her foetus to many risks [7-9]. The objective of this study was to identify conventional and traditional medicines used by pregnant women and to describe their safety profile.

2. Materials and methods

2.1. Study area

This descriptive cross-sectional multi-centre study took place from April to June 2021 in the city of Yaounde, Cameroon. Three health facilities were selected: the Yaounde Central Hospital (HCY), which is a second category public health facility, the Hospital of the Cameroonian Presbyterian Church of Djoungolo (HEPC), a denominational health facility, and the Social and Health Centre of Nkolndongo (SHCN), a private health facility of the same category as the HEPC. This study was authorized by the Institutional Ethics Committee of the Faculty of Medicine and Biomedical Sciences of the University of Yaounde I (Ref: N°139/UYI/FMSB/VDRC/DAASR/CSD on 11 May 2021).

2.2 Study population and sampling

The study population consisted of adult or minor pregnant women of any gestational age who agreed to participate with the consent of their parent or guardian. The study population also included French or English speaking pregnant women who were seen on an outpatient basis. The sampling was consecutive.

2.3 Data collection

Data were collected from the participants through questionnaire. The questionnaire was divided into two (2) sections. The first section was related to socio-demographic data (age, level of education, gestational age, preparation for pregnancy, period of discovery of pregnancy, religion, and marital status). The second section was related to the practice of self-medication (prevalence of self- medication using conventional and traditional medicine, census of medicines consumed). Conventional medicines were listed according to the potential iatrogenic risk set by the Food Drug and Administration (FDA).

2.4 Statistical analysis

The data were analysed using Word and Excel 2016 (Microsoft Office 2016, USA). Descriptive statistics involved the presentation of data as a percentage in tables and graphs and as a mean for the variables analysed.

3. Results

3.1 Socio-demographic characteristics of the population

Table 1: Summary of socio-demographic characteristics collected

Variables	Value (n%)
Sample size by health facility	
Social and Health Centre of Nkolndongo	180 (64.3%)
Yaounde Central Hospital	76 (27.1%)
Cameroonian Presbyterian Church Djoungolo Hospital	24 (8.6%)
Age (years)	
[15-20[	13 (4.6%)
[20-25[	55 (19.6%)
[25-30[	98 (35%)
[30-35[	82 (29.3%)
[35-40[	27 (9.6%)
[40-45[	4 (1.4%)
[45-50[	1 (0.4%)
Level of study	
Primary	17 (6.1%)
Secondary	121 (43.2%)
Higher	136 (48.6%)
None	6 (2.1%)
Gestational age	
1st quarter	56 (20%)
2nd quarter	70 (25%)
3rd quarter	126 (55%)
Preparing for pregnancy	
Yes	54 (19.28%)
No	226 (80.71%)
Period of discovery of the pregnancy	
Week 1	3 (1.32%)
Week 2	22 (9.73%)
Week 3	20 (8.84%)
Week 4	113 (50%)

Week 5	14 (6.9%)
Week 6	7 (3.09%)
Week 7	1 (0.44%)
Week 8	27 (11.94%)
Week 9	2 (0.88%)
Week 10	1 (0.44%)
Week 12	5 (2.21%)
Week 14	7 (3.09%)
Week 15	2 (0.88%)
Week 20	2 (0.88%)
Religion	
Catholic	152 (54.28)
Protestant	92 (32.85%)
Pentecostal	20 (7.14%)
Muslim	10 (3.57%)
Animist	06 (2.14%)
Matrimonial status	
Married	92 (32.85%)
Single	69 (24.64%)
Concubinage	76 (27.14%)
Widow	13 (4.64%)
Bride	30 (10.71%)

Two hundred and eighty participants were recruited, the majority from the Social and Health Centre of Nkolndongo. The average age was 28 ± 5.3 years. The most represented age group was 25 to 30 years, and almost half of them had a higher education level. More than half of the participants were in the third trimester of pregnancy, the majority of them had not prepared their pregnancy and half of them found out in the fourth week of pregnancy. Catholicism was the most common religion and unmarried women were the most represented.

3.2 Self-medication

Table 2: Prevalence of self-medication among pregnant women

	Conventional medication	Traditional and conventional medicine
Value (n%)	53 (18, 92%)	44 (15, 71%)

A total of 35% of the whole study population was practicing self-medication. Among this 18.92% claimed to have taken only conventional medicines and 15.71% a traditional medicine combined with at least one conventional medicine.

Table 2: Prevalence of self-medication among pregnant women

FDA	Generic name	ATC Code	n (%)	1st quarter	2nd quarter	3rd quarter
A	Iron	B03AC03	3 (2.94%)	1	2	
	Folic acid	B03BB01	1 (0.98%)	1		
	Calcium	A12AA04	1 (0.98%)			1
	Magnesium	A12CC02	1 (0.98%)			1
B	Amoxicillin	J01CA04	3 (2.94%)			3
	Chlorpheniramine	R06AB04	2 (1.96%)		1	1
	Chlorpheniramine + paracetamol	R01BA54	1 (0.98%)			1
	Aluminium hydroxide + magnesium hydroxide	A02AD01	3 (2.94%)			3
	Metronidazole	J01XD01	1 (0.98%)			1
	Menthol	R01AX23	1 (0.98%)		1	
	Paracetamol	N02BE01	73 (71.56%)	14	18	41
C	Quinine	P01BC01	2 (1.96%)			2
	Artemether	P01BE02	1 (0.98%)		1	
	Diclofenac	M01AB05	3 (2.94%)			3
NC	Phloroglucinol + trimethyl phloroglucinol	A03AX32	3 (2.94%)		1	2
	Dihydroartemisinine + piperaquine	P01BE25	1 (0.98%)	1		1
	Metopimazine	A04AD05	1 (0.98%)		1	
			102	17	25	60

FDA: Food Drug and Administration; **ATC**: Anatomical Therapeutic Chemical; **NC:** Not categorized.

The participants were more exposed to class B drugs with paracetamol being the most consumed drug. According to the FDA classification, class B drugs were the most represented (81.31%) followed by class A (6.59%) and class C (6.59%).

Table 4: Traditional medicines used for self-medication

Common name of the drug	Scientific name	Family	Indication(s)	(%)
Cassava leaves	*Manihotesculenta*	Euphorbiaceae	Anemia	(4,54%)
Aloe	*Aloe vera*	iliaceae	Maturation of the cervix	(9,09%)
Artemesia	*Artemisia annua*	Asteraceae	Malaria	(2,27%)
Twins' cane	*Costusafer*	Costaceae	Toning of the foetus	(2,27%)
Lemon	*Citrus limon*	Rutaceae	Flu-like condition; Gastric illness	(4,54%)
Lemongrass	*Cymbopogon citratus*	Poacees	Edema of the lower limbs	(4,54%)
Sorrel leaves	*Hibiscus sabdariffa*	Malvaceae	Anemia	(4,54%)
Guava leaves	*Psidiumguajava*	Myrtaceae	Typhoid; Ovarian cyst; Abdominal pain	(4,54%)
Ginger	*Zingiber officinale*	Zingiberaceae	Flu-like condition; cough	(9,09%)
Lapullier	*Triumfettapentandra*	Malvaceae	Urogenital hygiene; Anemia	(2,27%)
Herbal kings	*Ageratum conyzoides*	Asteraceae	Abdominal pain; Dermatological infection, Chlamydia	(4,54%)
Unknown revenues			Anti-abortive; Cervical dilatation; Chlamydia; Abdominal pain; Vaginal bleeding	1 (47,72%)

Almost half of the participants who self-medicated with traditional medicines did not know the name and the composition of the plant. On the other hand, *Aloe vera* (liliaceae) and *Zingiber officinale* (zingiberaceae) were the most commonly used phytomedicines.

4. Discussion

Two hundred and eighty participants were recruited with an average age of 28.2 ± 5.3 years. Most of them had studied up to tertiary levels and more than half of them were not married. These results are similar to those of Ngomba *et al* [10] and Bowring *et al* [11], who respectively reported average ages of 27.55 ± 6.88 and 28 years. However, Ngomba *et al* [10] observed a higher proportion of married women [10], thus contrasting with our results. Among the participants, 81% had not prepared their pregnancy and the majority discovered it during the fourth week of amenorrhoea. This observation was similar to studies by Bowring *et al* [11] and Nyarko [12]. With regard to religious affiliation, the results were consistent with those of Ngomba *et al* [10]. The prevalence of self-medication was 35%, of which 18.92% involved only conventional medicines and 15.71% traditional medicines combined with at least one conventional medicine. Beyene *et al* [13] found a self-medication prevalence of 26.6% in their study population among which 18.2% claimed to take conventional medicines and 2.43% combined modern and traditional medicine. Regarding the latter, Bobga *et al* [14] found a prevalence of 67.4% justified by the security crisis context. According to the FDA classification, drugs from the category B was the most represented, followed by category A and C. These results are in line with those of Beyene *et al* [13], although Belete *et al* had noted categories A, B, C and D in descending order [15]. In category B, paracetamol was the most commonly used drug in agreement with studies by Beyene *et al* [13] and Faisel *et al* [16]. The use of this drug during pregnancy has been linked to the occurrence of pre-eclampsia and an increased risk of children with attention deficit disorder, hyperactivity and autism spectrum disorders [17,18]. Among the category C drugs, diclofenac has been found to be associated with low birth weight and vaginal bleeding in the third trimester of pregnancy [19]. Quinine is an antimalarial drug reserved for severe malaria and is associated with increased risk of miscarriage in the first quarter of the pregnancy [20].

In the present study, aloe and ginger were the traditional medicines most frequently mentioned by the participants. On the other hand, almost half of the participants did not know the composition of their traditional treatment. *Zingiber officinale* was cited as the most widely used herbal medicine by many authors [13,21]. Aloe and ginger have several therapeutic properties [22,23]. However, the use of medicinal plants is not without risk, especially during pregnancy. In this regard, ginger in high doses is an abortion-inducing drug, emmenagogue. Aloe can induce spasms and hepatotoxicity [24,25]. In this study, the use of herbal medicines was associated with the concomitant use of at least one conventional medicine, also self-medicated. The simultaneous use of a conventional drug with a self-medication drug can lead to adverse interactions that can be life-threatening [26].

The conventional and traditional medicines identified in this study might be fatal the both the pregnant women and the fetus.

4.1. Strength of the study

This study provided an overview of the self-medication during pregnancy and the potential risks.

4.2. Limitations of the study

This study does not provide information on the reasons why pregnant women self-medicate and the safety profile of the herbal medicines.

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