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Self-medication practice among pregnant women attending antenatal care at health centers in Bukavu, Eastern DR Congo

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ABSTRACT: There is growing concern about self-medication during pregnancy in many low resource countries. Despite its adverse impact on pregnancy, at the eastern of DR Congo, no study was conducted on this question until now. The aim of this study was to determine the prevalence and factors associated with self-medication among pregnant women attending antenatal care in Bukavu town. A cross-sectional analytical study was conducted in 14 health centers of Bukavu from March to April 2015. Multi stage sampling method was used to select 920 pregnant mothers. We chose fourteen health centers from all health centers in Bukavu by a simple random method. Binary logistic regression analysis was used to reveal association with self-medication practice. Results revealed a prevalence of self-medication (61.3%) among pregnant women interviewed. Reasons for practicing self-medication were disease not serious, prior experience about the drug, economical cost and easy access to the drug without prescription. The main drugs used were paracetamol (40.8%), amoxicillin (17.1%), and papaverin (13.4%). The factors associated with the self-medication in Bukavu town were previous self-medication practice, drugs advised by pharmacist/druggist, lack of sensibilisation on the drug's danger and use of herbal remedies. This study shows that, in Bukavu, self-medication among pregnant women is common concern. It is time to address to pregnant women a special program to prevent the harmfulness of self-medication on pregnancy.

KEYWORDS: antenatal care, self-medication, pregnant women, DR Congo.

1 INTRODUCTION

During pregnancy, drugs can be used for some medical reasons like chronic pathologies (hypertension…) or new medical troubles (vomiting …), but they have to be utilized rationally [1]. Pregnancy is a physiological condition, where drug treatment requires special attention to take care of the health of mother and unborn child [2]. Self-medication can be defined as the use of medication by a patient on his own initiative or on the advice of pharmacists or lay person instead of consulting a medical practitioner. In other words, Self-medication is the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms [3].

In developed countries, self-medication is become one of the most important aspects of the health care system because of their health system is efficient and people accesses easily to appropriate health information from allowed sources [4]. Studies have shown that drug exposure during pregnancy can cause low birth weight, longer birth hospitalization, premature birth, feeding problems, and respiratory problems in fetuses and newborns [5].

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In many low resource countries such as Democratic Republic of Congo (DRC) where the health system is not efficient and associated with easy availability of drugs on public place, there is an increased risk that pregnant women be exposed on self-medication.

Michael J, et al. have shown that women tend to use self-medication frequently and repeatedly to treat problems such as dysmenorrhea, menopausal symptoms remedy, menstrual disorders, mood disorders, osteoporosis prevention, pregnancy and breast feeding problems [6]. Self-medication is widely practiced in the whole word especially in developing countries for many reasons such as dearth of safety health information on drugs in pregnancy, easy availability to drugs.

No studies were found ascertaining self-medication practice during pregnancy in South-Kivu province on PubMed search (keywords: drug utilization in pregnant women in South-Kivu, medications during pregnancy in South-Kivu). However, in South-Kivu province, especially in Bukavu town, due to easy availability of medications on public place coupled with the inadequate health services, many people, including pregnant women, can obtain most of the medications desired without prescriptions. Therefore, this study aimed at determining prevalence and factors associated with self-medication among pregnant women.

2 MATERIAL AND METHODS

A cross-sectional study was conducted between March and April 2015 in fourteen health centers in Bukavu town for a period of two months. Bukavu is the town of South Kivu province, located at the Eastern of DR Congo. Study population was constituted by all pregnant women who came for antenatal care to the selected health centers during the study period. Inclusion criteria: pregnant woman living in Bukavu, attending antenatal care during the study period and consent to participate in research. Data were collected in face-to-face interviews by fourteen midwives, who were trained in doing interviews.

The sample size necessary to achieve significance was calculated with the following formula: n**= (Z2 p(1-p))/d2 and** taking proportion of drug use during pregnancy 63.8% from a study in Ibadan, Nigeria [7]: **n**=sample size Z=1.96 at 95% confidence level **P**=Expected prevalence (0,64) **d**= Precision (0,05) and design effect of 2.6. $((1.96)^2 \times 0.64 \times (1-0.64))/ (0.05)^2 = 354 \times 2.6 = 920$. The final sample size was 920.

Multi stage sampling method was used to select the required pregnant mothers. After listing the health centers in Bukavu whose total number is 34, fourteen were sampled using simple random sampling method. Proportional numbers of pregnant women were assigned to each health center based on the flow of pregnant women per day calculated taking one previous month antenatal care record. Systematic random sampling method was used to select the pregnant women in each health center.

DATA ANALYSIS

Descriptive statistics were utilised as appropriate. Binary logistic regression was used to determine the associations between self-medication as the dependent variable and a set of exposure variables, which were the Sociodemographic and clinical data. The strength of the associations between each exposure variable with the dependent variable was measured by odds ratios (OR) with 95% confidence intervals (95% CI). Univariate and multivariate regression models were used to estimate crude and adjusted OR measures, respectively. The SAS 9.2 software was used for all statistic procedures and the significance level was set to 0.05.

ETHICAL CONSIDERATIONS

Official letter of research from" Institut Supérieur des Techniques Médicales de Bukavu" was written to selected health centers of Bukavu and verbal consent was obtained from individual participants. All the participants were told that their participation would be on voluntary basis and their information will be kept confidential and anonymous. Moreover, the purpose, procedures of the study, advantages and disadvantages were told to the participants.

3 RESULTS

3.1 SOCIODEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

The majority of the respondents were in the age group of 15 and 24 years. Regarding their education status, 61.8% of them had completed secondary school. 92.6% of respondents were married. Most of the pregnant women participating in the study (85%) were unemployed, where 57.4% of the participants are housewives (**Table 1**).

3.2 OBSTETRIC AND MEDICAL HISTORIES OF RESPONDENTS

Some pregnant women had a history of previous adverse pregnancy outcome, particularly abortion, premature childbirth and fetal death. Clay and use of addiction were reported in this study (**Table 2**).

3.3 SELF-MEDICATION PRACTICE OF RESPONDENTS

Table 3 showed that 59.9% of the pregnant women practice self-medication. Ailments in which respondents self-medicate were tract urinary infection and common cold and cough. Paracetamol and amoxicillin were the main medications used in self mediation. The two most usual sources of drugs used in self-medication were pharmacists/ druggist (71.9%), the free sale at the market. Self-medicated respondents provided reasons that 28.3% of them believed the disease was not serious; 25.4% of them have had prior experience to the drug; 18.1% of them were of the opinion that it was easy to access to the drugs without prescription in their area.

3.4 FACTORS INFLUENCING SELF-MEDICATION PRACTICE OF RESPONDENTS

Self-medication practice among pregnant women were significantly associated with precious self-medication, advised by pharmacist/druggist, lack of sensitizing on drug's danger and use of herbal remedies ($p<0.05$) (Table 4).

4 DISCUSSION

In this study, the prevalence of self-medication among 920 pregnant women in Health centers of Bukavu town, DRC was investigated and its factors associated with. Our results showed 59.9% prevalence rate of self-medication during pregnancy, which is very higher than the results in Southern of Iran (30.6%) [1], Addis Abeba (12.4%) [2]. However, the prevalence observed in this study is lower than the results of the study done in Nigeria (72.4%) [3], in Egypt (86.0%) [4]. In general, self-medication becomes a subject to be taken into consideration in improving of maternal health. It was observed in this survey; both modern drugs and traditional medicines are commonly used for self- medication. The high prevalence of drug use during pregnancy identified in this study may reflect prenatal care weaknesses in primary care, which include impairment of the continuous assessment of the mother during pregnancy.

Paracetamol and amoxicillin were the most drugs mainly used in this study. This finding is in agreement with the study done in Peru [5], but also is in line with others studies done on the same subject [6]. Plausible explanation of these findings might be due to the ailments for which respondents self-medicate (i.e. tract urinary infection, common cold and cough). This confirms that analgesics are the commonly used over-the-counter medications for self-medication. Note that antibiotic self-medication have a global risk of spread of antibiotic resistance as reported in the literature [7].

Non-seriousness of the disease, prior experience about the drug and easy access to the drugs without prescription were the major reasons for self-medication in this study. This finding is in consonance with what has been generally observed in the self-medication among pregnant women literature [6], [8], [9]. Healthcare providers, thus, should provide personalized counseling to pregnant women about possible negative side effects of over-the-counter-medication on their unborn child

The identification of factors associated with self-medication practice among pregnant women is important as it provide helpful information to establish strategies to prevent indiscriminate use of medications. The strongest predictors of self-medication practice were the precious self-medication, the advice/information from pharmacist/druggist, the lack of sensitizing on drug's danger and use of herbal remedies.

In fact, we found a significant relationship between age and use of self-medication practice, where subjects aged between 25 and above years reported the highest self-medication. But, in logistic regression, that relationship disappeared. Similar to our finding, the study conducted in Ethiopia [6] showed a significant association between self-medication and prior self-medication experience, maternal education, age of the respondents, number of children and place of residence.

Similarly, the study conducted in Maringa, [10] revealed that marital conditions, trimester of pregnancy, chronic disease, mental illness and orientation of professionals at the Basic Health Units were statistically significant with the use of medicines. It is remarkable that, the health professionals, particularly nurses providing antenatal care, should emphasize the danger of the drugs during pregnancy.

In addition, an important aspect of a qualitative improvement of the practice may be the information, education and counseling of the pregnant women of which the health professional plays a major role.

5 CONCLUSION

Self-medication is prevalent in Bukavu town 59.9% of pregnant women using some form of self-medication during the current pregnancy. Paracetamol and Amoxicillin were the drugs most commonly used for self-medication. Herbal remedies and clay were also used for self-medication. The main reasons reported by pregnant women to self-medication practice were dot disease serious, prior experience with drug and easy accessibility to drug without prescription. Precious self-medication, advised by pharmacist/druggist, lack of sensitization on drug's danger were identified as the factors influencing self-medication during pregnancy. These findings will help health care professionals especially pharmacists to address strategies (people education on the benefits and risks of self-medication) of improving antenatal care and a formal policy of prescription among pregnant women.

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ANNEXE

Table 1: Socio-demographic characteristics of pregnant women attending ANC care in Bukavu town, 2015.

Variable	Frequency	Percentage
Age (years)		
15-19	258	28.0
20-24	355	38.6
25-29	178	19.3
30-35	101	11.0
> 35	20	3.0
Education status		
Illiterate	70	7.6
Primary school	220	23.9
Secondary school	569	61.8
University	61	6.6
Employment status		
House-wife	528	57.4
Employed	18	19.5
Student	19	20.5
Merchant	309	33.6
Self employed	46	5.0
Marital status		
Married	852	92.6
Single/separated	68	7.4
Distance between center and respondent's residence		
0 -5 kilometer	704	76.5
More than 5	216	23.5
Pregnancy stage		
First trimester	58	6.3
Second trimester	293	31.8
Third trimester	569	61.9

OBSTETRIC AND MEDICAL HISTORIES OF RESPONDENTS

Table 2: Obstetric and medical histories of the pregnant women attending ANC care in Bukavu town, 2015.

Variable	Frequency	Percentage
Consumption of clay		
Yes	532	57.8
No	388	42.2
Use of herbal remedies		
Yes	414	45.0
No	506	55.0
Previous fetal death		
Yes	78	8.5
No	841	91.5
Previous premature childbirth		
Yes	36	3.9
No	884	96.1
Previous of abortion		
Yes	258	28.0
No	662	72.0
Use of addiction (tobacco, alcohol)		
Yes	400	43.5
No	520	56.5

SELF MEDICATION PRACTICE OF RESPONDENTS

Table 3: Self medication practice during pregnancy among pregnant women attending ANC care in Bukavu town, 2015.

Variable	Frequency	Percentage
Current self medication practice		
Yes	551	59.9
No	369	41.1
Previous self medication practice		
Yes	416	45.2
No	504	54.8
Ailments for which self medication is used (n=551)		
Malaria	128	23.2
Typhoid fever	98	17.7
Tract urinary infection	242	43.9
Common cold and cough	168	30.5
Gastrointestinal disorders	50	7.1
Other diseases (anemia, asthma, headache, …)	154	27.9
Medication used in self medication (n=551)		
Paracetamol	225	40.8
Aspirin	42	7.6
Amoxicillin	94	17.1
Cough syrup	44	8.0
Vitamins	29	5.3
Papaverin	74	13.4
Irons	14	2.5
Vermox	7	1.3
Other drugs (antibiotics…)	10	1.8
Antacids	12	2.2
Source of drugs used in self medication		
Pharmacist/druggist	672	73.0
Yourself	84	9.2
Free sale at the market	120	13.0
Neighbors/friends	44	4.8
Reasons for practicing self-medication (n=551)		
Disease not serious	156	28.3
Prior experience about the drug	140	25.4
Economical cost	78	14.1
Time saving	43	7.8
Easy access to the drugs without prescription	100	18.1
Others	34	6.2
sensitized on the drug's danger		
Yes	178	19.3
No	742	80.7

FACTORS INFLUENCING SELF MEDICATION PRACTICE OF RESPONDENTS

Table 4: Bivariate and multiple logistic regression analysis for factors associated with self medication practice among pregnant women in Bukavu town, 2015.

Parameters	N=920	self medication (%)	Crude OR (CI)	Adjusted OR (CI)
Age				
≥ 25 years	307	64.5	1.4 (1.00-1.77)*	0.8 (0.59-1.21)
< 25 years	613	57.6	1.0	
Education status				
Secondary/university school	630	60.5	1.0 (0,81-1,43)	-
Illiterate/primary school	290	58.6	1.0	
Marital status				
Without partner	68	59.9	1.0 (0.61-1.68)	-
With partner	852	60.3	1.0	
Use of herbal remedies				
Yes	414	68.4	1.9 (1.46-2.51)*	1.7 (1.26-2.42)*
No	506	53.0	1.0	1.0
sensitized on the drug's danger				
No	742	75.8	2.5 (1.69-3.57)*	2.5 (1.84-3.61)*
Yes	178	56.1	1.0	1.0
Previous self-medication practice				
Yes	416	83.4	7.3 (5.40-10.12)*	6.1 (4.36-8.64)*
No	504	40.5	1.0	1.0
Advised by pharmacist/druggist				
Yes	672	70.5	5.3 (3.87-7.29)*	4.7 (3.34-6.87)*
No	248	31.0	1.0	1.0
Use of addiction				
Yes	400	64.0	1.3 (1.03-1.77)*	1.3 (0.93-1.83)
No	520	56.7	1.0	

**statistically significant at 95% confidence interval.*