



Self-medication among Pregnant Women Attending Ante-natal Clinics in Jos-North, Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Author BNJ did the study design and wrote the protocol. Authors IJE and BMA did the statistical analysis and literature searches while author MLPD did the analyses of the study. All authors read and approved the final manuscript.

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ABSTRACT

Background: Self-medication in pregnancy is a great risk irrespective of consumer's perceived knowledge about the safety of the medicine or previous use history.

Aims: This study examined the extent of self-medication and its determinants among pregnant women attending ante-natal clinics.

Study Design: Cross-sectional survey of pregnant women attending ante-natal clinics.

Methods: Pre-tested structured questionnaire was employed to assess the perception, attitude, practices and views of respondents. We selected respondents in an alternate pattern; 350 respondents attending ante-natal clinics at two tertiary hospitals and a primary health care centre in Jos, Nigeria were recruited. We approached respondents with the questionnaires during ante-natal clinics; this was repeated consecutively for six weeks between November 5th, 2014 and December 21st, 2015.

Statistical Package for Social Sciences (SPSS) version 17 was used for analysis. Results were presented in descriptive and inferential statistics. P -value $\leq .05$ was considered statistically significant for association.

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Results: Self-medication was prevalent in 62.9% of pregnant women attending ante-natal clinics. Over one-tenth (11.8%) self-medicated with herbal medicine while 6.6% used conventional and herbal medicines concomitantly in the current pregnancy. Majority (87.6%) of respondents demonstrated adequate knowledge about medicine safety issues, yet self-medication practice was high. Having foreknowledge about the condition and its management (31.4%), a history of previous treatment (26.3%) and attitude towards the use of medicine for minor ailments (21.9%) were the major facilitators of self-medication in pregnancy.

Conclusion: Self-medication in pregnancy is considerably high (62.9%). Women probably perceived minor ailment requires mild medication purportedly considered safe in pregnancy. Self-medication in pregnancy increases as knowledge and awareness about the harmful effects of medicine increases, though this interaction is statistically insignificant.

Keywords: Self-medication; pregnant women; ante-natal clinics; Nigeria.

1. INTRODUCTION

Pregnancy is a special physiological condition capable of influencing the pharmacokinetic and pharmacodynamic disposition of drugs. Self-medication in pregnancy must be discouraged irrespective of clients' perceived knowledge about the safety of the medicine or having history of its previous use. The choice of drugs to prescribe for conditions in pregnancy is difficult and often creates anxiety even among clinicians [1].

Certain medicines are contra-indicated in pregnancy because of their immediate or short term adverse impact on the foetus or the mother. However, some effects occur after a period of latency, such as carcinogenesis or effects on reproduction [2]. The diethylstilbestrol (DES) disaster is a well celebrated scenario. DES was given to pregnant women between the years 1940 and 1970; it was used to prevent threatened and recurrent abortion. Epidemiological studies later revealed vaginal adenocarcinoma and infertility in the daughters of women exposed to DES [3]. The thalidomide disaster is another well known case in the medical history. Pregnant women who were exposed to thalidomide delivered children with phocomelia [3,4].

In Nigeria, self-medication in pregnancy is rampant. The herbal dimension of self-medication among pregnant women deserves great concern especially when we consider the cultural relevance, availability and affordability of traditional remedies in the light of severe economic crises. A study conducted among pregnant women attending ante-natal clinics in Nigeria found a wide spread use of herbal medicines (67.5%) across the country [5]. In the South-South region of the country, 72.4% of

pregnant women attending ante-natal clinics practice self-medication [6].

This study assessed the extent and the predisposing factors that influenced self-medication among pregnant women attending ante-natal clinics (ANC) in Jos-North, Nigeria.

2. METHODS

2.1 Ethical Clearance

The ethical permission for this study was obtained from Plateau State Specialist Hospital (PSSH) and Bingham University Teaching Hospital (BhUTH), Jos, Plateau State, Nigeria.

2.2 Study Site

The study was carried out at the Plateau State Specialist Hospital (PSSH), Bingham University Teaching Hospital (BhUTH) and PHC centre, Township Stadium, Jos-North, Nigeria.

2.3 Study Design/ Data Collection Technique

This was a cross-sectional questionnaire survey of pregnant women attending ante-natal clinics in Jos, Nigeria. The questionnaire consisted of 7 domains: The first section assessed demographics; the second collated social and obstetric history, the third domain was a structured list of 22 medicines/drugs including prescription-only-medicines and over-the-counter medicines. The fourth component assessed self-medication practice with herbal medicines as well as concurrent use of herbal and orthodox medicine during the current pregnancy while the fifth section of the questionnaire assessed self-medication practice with the following drugs:

alcohol, cigarette, cocaine, *Cannabis sativa*, coffee, *Cola nitida* and tramadol. The sixth section examined sources of information on medicine used in self-medication while the last domain assessed the knowledge and awareness of respondents with respect to safety about medicine use in pregnancy. Participants were approached with a pre-tested questionnaire in an alternate fashion during regular ante-natal clinic days. This was repeated consecutively for six weeks between November 5th, 2014 and December 21st, 2015.

2.4 Data Analysis

Data was abstracted and coded into Micro-Soft Excel spreadsheet and transcribed into Statistical Program for Social Sciences (SPSS) version 17. Self-medication practice was compared with education, gravida, termination of pregnancy, child mortality and gestational age of pregnancy using Chi-square (X^2) analysis and $P \leq .05$ was considered statistically significant for association. Results were presented as descriptive and inferential statistics.

3. RESULTS

3.1 Demographics

The study examined 350 pregnant women attending ante-natal clinics in three selected hospitals in Jos metropolis, Nigeria. Married women accounted for 97.1% of the respondents. The age group 11-19 years accounted for the least population of pregnant women attending ante-natal clinics (3.4%) while the age group 20-28 years constituted the majority (46.9%).

The majority of the respondents attended tertiary institutions (61.7%), 31.4% went to secondary

school, 2.9% had primary qualification while 2.9% cannot read or write. Civil servants accounted for 34.6%; 19.4% were house wives who completely depended on their husbands for up-keep while 40% identified as business women. Majority of the respondents were primigravid (36.9%); 26.6% had one child while 20.9% had two children (Table 1).

Ninety three respondents (26.6%) had history of miscarriage, 51(14.6%) ever had termination of pregnancy while 1.2% of respondents admitted having children with birth related abnormality. Majority of the participants were in their last trimester (7-9 months), 28% second trimester (4-6 months) and 6.5% first trimester (1-3 months) of pregnancy (Fig. 1).

3.2 Self-medication in Pregnancy

Self-medication with both prescription-only-medicines and over-the-counter medicines was recorded in 62.9% of pregnant women attending ante-natal clinics (ANCs).

While majority (87.6%) (Table 2) of the respondents achieved satisfactory scores on questions that measured the cognitive domains of medication use in pregnancy; analysis of the assessment showed that over three-quarter (82.0%) of participants admitted self-medication during pregnancy could result in new born abnormality; about three-quarters (73.7%) of them agreed that the most critical period to avoid medication use in pregnancy is the first trimester, while almost all of them (94.8%) reported that staffs at the ante-natal clinics provided medication information/education. This study demonstrated that the higher the cognitive scores on medication knowledge, the higher the chances of self-medication in pregnancy; this is however, not statistically significant.

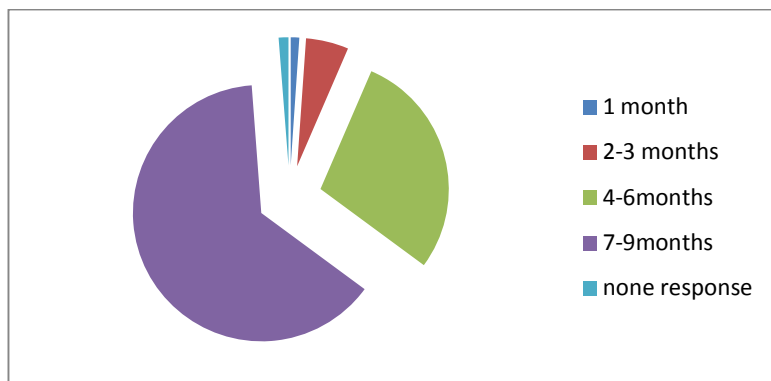
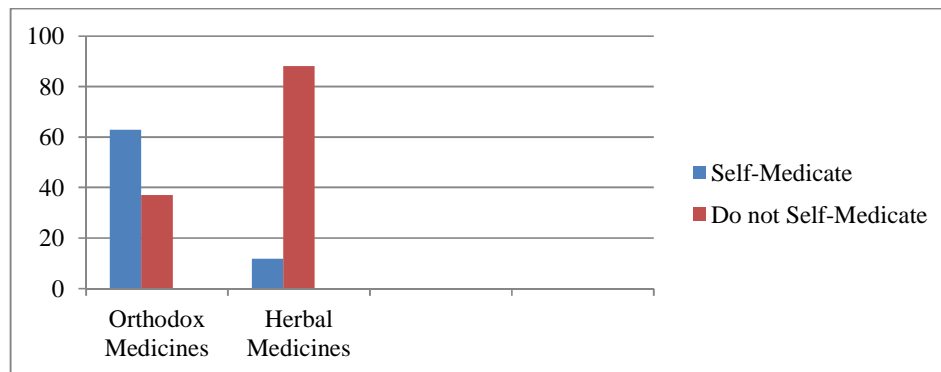


Fig. 1. Gestational age of pregnancy

Table 1. Demographics of respondents and attitude toward self-medication practice

Variable	Self-medication practice			
	Non self-medicate		Self-medicate	
Age	Freq	Percentage (%)	Freq	Percentage (%)
11-19	5	41.7	7	58.3
20-28	63	38.4	101	61.6
29-36	43	32.6	89	64.4
37-45	16	44.4	20	55.6
Religion				
Christianity	108	36.4	189	63.6
Muslims	22	42.3	30	57.7
Traditional religion	0	0	1	100
Marital status				
Married	125	36.8	215	63.2
Single	3	50	3	50
Divorced	1	50	1	50
Education				
Can't read or write	4	40	6	60
Primary	7	70	3	30
Secondary	40	36.4	70	63.6
Tertiary	76	35.2	140	64.8
Occupation				
Civil servants	46	38	75	62
Business	52	37.1	88	62.9
Farming	2	33.3	4	66.7
House wife	24	35.3	44	64.1
Gravida				
1	49	41.2	70	58.8
2	35	34	68	66
3-5	37	33.6	73	66.4
6-8	8	53.3	7	46.7
9-11	1	33.3	2	66.7

Cumulative percentage < 100 for any item was due to no response

**Fig. 2. Self-medication practice with orthodox and herbal medicines**

Predisposing factors for self-medication during pregnancy were assessed. About one-third (31.4%) believed they knew about the disease and its treatment, 41 (26.3%) revealed they have been treated for the same condition previously while attitude towards medication use for minor ailments accounted for 21.9% (Table 3).

Respondents with history of termination of pregnancy were more likely to self-medicate, however, this was not statistically significant. The study found that the older the pregnancy and the higher the history of child mortality, the higher the likelihood of self-medication though, these were not statistically significant (Table 4).

Table 2. Respondents scores on knowledge about harmful effects of medicines in pregnancy

Variable	%
Very Good	57.5
Good	30.1
Poor	7.8
Very poor	4.3

Cumulative percentage < 100 for any item was due to no response

4. DISCUSSION

This study established that higher cognitive scores were more likely to predict self-medication; this is however statistically insignificant. While 87.6% of the respondents achieved good cognitive scores on the possible harmful effects of medicine use during pregnancy; 94.8% admitted receiving information on medicine safety at the ante-natal clinic, 59.4% were informed of associated risks; 82% reported medicines may be associated with abnormality in the new born. However, majority (62.9%) of the respondents attending ante-natal clinics (ANCs) practiced self-medication with both prescription-only-medicines and over-the-counter medicines.

This finding is consistent with a study in Ibadan, Nigeria which reported self-medication prevalence of 63.8% among pregnant women who attended ante-natal clinic [7]. Furthermore, the researchers showed that 31.2% of the respondents admitted using herbal remedies in the current pregnancy. In Uyo, Nigeria, Abasiubong et al. [6] reported a higher prevalence (72.4%) of self-medication practice among the same cohort of women. In Jos, Nigeria, Emmanuel et al. [8] conducted similar research within Jos Metropolis. Though their study employed convenient sampling and the sample size was relatively small (120), their finding suggests that 85% of pregnant women attending ANC practiced self-medication. These findings raise serious concern about the safety of women in spite of the medication counseling they

purportedly claimed to receive from health professionals.

Fakeye et al. [5] assessed attitude and use of herbal medicine among pregnant women attending ANCs from the three geo-political regions of Nigeria. The study found that 67.5% of these women were self-medicating with herbal medicines. In Kano, Nigeria, 31.4% of pregnant women attending a tertiary health centre practiced self-medication with herbal remedies [9]. In this study, self-medication with herbal medicine was lower (11.8%); it compared with the finding in Nairobi which recorded a prevalence of 12% among women accessing ante-natal care in a district hospital [10]. Furthermore, 6.6% of the respondents in this study indicated concurrent use of herbal and orthodox medicines. While herbal medicine use is predominant among 80% of Africans [11], the safety of most of these natural products has not been fully elucidated especially in pregnancy.

This research found that having foreknowledge about the disease and its management (31.4%), having a previous use history (26.3%) and attitude towards medicine use for mild ailment accounted for 21.9% for medication use among pregnant women (21.9%). These reasons proffer the individual opportunity for self risk evaluation and might blur the safety concerns about the medicines. Furthermore, these reasons might shape the individuals attitudes and behaviour which reinforces medication use. Grigoryan et al. [12] examined the impact of predisposing (attitudes, beliefs and knowledge) and enabling factors (country wealth and health care system factors) on self-medication with antibiotics in Europe. They found that predisposing factors such as perceived appropriateness and an attitude favouring antibiotic use for mild ailments were associated with antibiotic use.

While it is generally acceptable that education and information empowers the individual to make informed decisions; this study found that

Table 3. Reasons for practicing self-medication in pregnancy

Reasons for self-medication	Self-medication	
	Freq	(%)
I know about the disease and-how it is treated	49	31.4
I have been treated for the same-condition previously	41	26.3
Treatment for a minor ailment	34	21.9
Recommendation from-friends/acquaintances	11	7.0
Saves time	11	7.0
Cost effectiveness	10	6.4
Total	156	100.0

Table 4. Chi-Square interaction of selected variables with self-medication practice in pregnancy

Variable	Self-medication				p-value
	Do not self-medicate		Self-medicate		
	Freq	Percentage (%)	Freq	Percentage (%)	
Education					
Can't read and write	4	40	6	60	.24
Primary	7	70	3	30	
secondary	40	36.4	70	63.6	
Tertiary	76	35.2	140	64.8	
Total	127	36.7	219	63.3	
Gravida					
1	49	41.2	70	58.8	.62
2	35	34	68	66	
3-5	37	33.6	73	66.4	
6-8	8	53.3	7	46.7	
9-11	1	33.3	2	66.7	
Total	130	37.1	220	62.9	
Termination of pregnancy					
Yes	16	31.4	35	68.6	.32
No	110	38.7	174	61.3	
Total	126	37.6	209	62.4	
Child mortality					
1	14	32.6	29	67.4	.49
2	4	40	6	60	
3-5	2	25	6	75	
6-8	2	50	2	50	
None	108	38.0	176	62.8	
Total	130	37.2	219	62.8	
Gestational age of pregnancy					
1 month	1	25	3	75	0.34
2-3 months	9	47.4	10	52.6	
4-6	41	41	59	59	
7-9	79	35.4	144	64.6	
Total	130	37.6	216	62.4	

self-medication in pregnancy shows a trend that increases with level of education. These trends were however, not statistically significant. In Europe self-medication with antibiotics correlates with higher educational level [13]. Surveys conducted among university students in Nigeria found that self-medication increases as class level increases [14] and as knowledge about medicines increases [15,16].

Women within gravida 1-5, 211 (95.9%); those with older gestational age, 7-9 months (64.6%); women with history of termination of pregnancy as well as those who recorded higher history of child mortality were more likely to practice self-medication in pregnancy; however, none of these was statistically significant. It can be argued that patients' belief about the appropriateness and perceived previous safety of particular medicine may be in conflict with practitioners' reliance on evidence-based practice. In Nigeria, medicine regulation is haphazard and unorganized; access

to care, including the public facilities is very poor. Worst still, it is mostly based on "out of pocket principle", thus, addressing issues of self-medication in pregnancy is imperative.

5. CONCLUSION

The extent of self-medication practice among pregnant women attending ante-natal clinics is very high (62.9%). It occurs in spite of high level of educational attainment, cognitive level and awareness about the possible harmful effects of medicines in pregnancy. Having foreknowledge about the condition and its management (31.4%), a history of previous treatment (26.3%) and attitude towards the use of medicine for minor ailments (21.9%) were the major facilitators of self-medication in pregnancy.

CONSENT

All authors declared that 'written informed consent was obtained from the patient (or other

approved parties) for publication of this paper and accompanying images.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. McElhatton P. Adverse drug reactions in pregnancy. In: Anne, L. ed. Adverse drug reactions 2nd edn. London: Pharmaceutical Press. 2006;75-79.
2. Beard K, Lee A. Introduction. In: Anne L. ed. Adverse drug reactions 2nd edn. London: Pharmaceutical Press. 2006;2(7).
3. Mac Lean F. Sexual dysfunction and infertility. In: Anne, L. ed. Adverse drug reactions 2nd edn. London: Pharmaceutical Press. 2006;429.
4. Dencker L, Danielsson BR. In: Mulder GJ, Dencker L ed. Pharmaceutical toxicology. London: Pharmaceutical Press. 2007;102.
5. Fakeye TO, Adisa R, Musa IE. Attitude and use of herbal medicines among pregnant women in Nigeria. BMC Complementary and Alternative Medicine. 2009;9:53. Available:www.biomedcentral.com/1472-6882/9/53
6. Abasiubong F, Bassey EA, Udobang JA, Akinbami OS, Udo SB, Idung AU. Self-medication: Potential risks and hazards among women in Uyo, Nigeria. Pan African Medical Journal. 2012;13:15. Available:www.panafricanmedjournal.com/content/article/13/15/full
7. Yusuf KB, Omerusehe LD. Determinants of self-medication practices among pregnant women in Ibadan, Nigeria. International Journal of Clinical Pharmacy. 2011;33(5): 868[Abstract].
8. Emmanuel A, Achema G, Afoi BB, Maroof R. Self medication practice among pregnant women attending antenatal clinic in selected hospitals in Jos, Nigeria. Int J Nurs H Sci. 2014;1(6):55-59.
9. Tamuno I, Omole-Ohonsi A, Fadare J. Use of herbal medicine among pregnant women attending a tertiary hospital in Northern Nigeria. The Internet J Gyn. Obs. 2010;15(2). Available:www.ispub.com/IJGO/15/2/13572. (Accessed: 26/06/2016)
10. Mothupi MC. Use of herbal medicine during pregnancy among women with access to public healthcare in Nairobi, Kenya: A cross-sectional survey. BMC Complementary and Alternative Medicine. 2014;14:432. Available:www.biomedcentral.com/14726882/14/432
11. World Health Organization. Traditional medicine factsheet; 2003. Available:www.who.int/mediacentre/factsheets/2003/fs134/en/
12. Grigoryan L, Burgerhof JGM, Degener JE, Deschepper R, Lundborg CS, Monnet DL et al. Determinants of self-medication with antibiotics in Europe: The impact of beliefs, country wealth and the healthcare system. Journal of Antimicrobial Chemotherapy. 2008;61:1172-1179.
13. Grigoryan L, Haijjer-Ruskamp FM, Burgerhof JGM, Mechtler R, Deschepper R, Tambic-Andrasevic A. et al. Self-medication with antimicrobial drugs in Europe. Emerging Infectious Diseases. 2006;12(3):452-459.
14. Osemene KP, Lamikaura A. A study of the prevalence of self-medication practice among university students in southwestern Nigeria. Trop J Pharm Res. 2012;11(4): 683-689.
15. Olayemi OJ, Olayinka BO, Musa AI. Evaluation of antibiotic self-medication pattern amongst undergraduate students of Ahmadu Bello University (Main Campus), Zaria. Research Journal of Applied Sciences Engineering and Technology. 2010;2(1):35-38.
16. Auta A, Shalkur D, Omale S, Abiodun AH. Medicine knowledge and self-medication practice among students. African Journal of Pharmaceutical Research and Development. 2012;4(1):6-11.

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