DRUG UTILIZATION PATTERN DURING PREGNANCY IN NORTH INDIA

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ABSTRACT

BACKGROUND: *Pregnancy is a special physiological condition, where drug treatment presents a special concern.* ***AIMS:*** *To evaluate the drug utilization pattern during pregnancy and to evaluate the effect of the educational and economic status on it..* ***DESIGN:*** *The retrospective cross-sectional study.* ***SETTING:*** *The postgraduate Department of Pharmacology and Therapeutics of a medical college. and the antenatal clinic of the institution.* ***MATERIALS AND METHODS:*** *Medical students filled 405 questionnaires after interviewing pregnant women (243 primigravida and 152 multigravida). All the collected questionnaires were analysed for various study parameters.* ***STATISTICAL ANALYSIS USED:*** *Inter-group comparison was done using chi-square test. P value <0.05 was considered statistically significant.* ***RESULTS:*** *A total of 700, 1086 and 686 drugs, with an average of 1.73, 2.89 and 2.49 drugs per pregnant women, were used during first, second and third trimester of pregnancy, respectively. A majority of the drugs used, were from category-A, followed by category-B and category-D. However, category C and X drugs constituted 2.90 (20) and 5.71% (40) of drugs used during the third trimester and first trimester, respectively. Herbal/ homeopathic drugs constituted 6.42 (45), 3.68 (40) and 1.46% (10) of the drugs used in the first, second and third trimester of pregnancy, respectively (P=649). 33.33% (135) women believed that drug use during pregnancy is dangerous to both mother and child and 37.03% (150) believed that drugs are dangerous throughout pregnancy. 55.55% (225) females advocated the use of iron/folic acid during pregnancy. 24.69% (100) of women had knowledge about barrier contraceptives. Self-medication and homeopathic/ herbal drugs use was found more in graduates than in undergraduates; as well as, it was more in the higher socioeconomic group than the lower socioeconomic group.* ***CONCLUSION:*** *There is a need to educate and counsel women of child-bearing age, regarding the advantages and disadvantages of drug use during pregnancies, with special reference to alternative therapies and self-medication.*

Key words: (Pregnancy or prenatal care/standards), (prescriptions, drug utilization, drug/statistics and numerical data or drug utilization/trends or drug utilization/statistics and numerical data or drug utilization review/methods or (drug utilization and pharmacoepidemiology/methods), (food and drug administration) classification, humans

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Drugs play an important role in improving human health and promoting well-being. However, to produce the desired effect, they have to be safe, efficacious and have to be used rationally. In pregnancy, drug treatment presents a special concern due to the threat of potential teratogenic effects of the drug and physiologic adjustments in the mother, in response to pregnancy. However, it has been documented that congenital abnormalities caused by human teratogenic drugs accounts for less than 1% of total congenital abnormalities.[1] About 8% of pregnant women need permanent drug treatment due to various chronic diseases and pregnancy-induced complications.[1] Moreover in India, due to easy availability of drugs coupled with inadequate health services, increased proportions of drugs are used as self medication (for common complains and infective conditions), as compared to the prescribed drugs.[2] Hence, these consumers always face the threat of adverse drug reactions and drug interactions between active hidden ingredients of both herbal and allopathic drugs. Pharmacoepidemiological studies can help in minimizing the inherent risk of drug use in pregnancy, by establishing a profile of drug consumption, by evaluating the existing health services and by investigating the interventional measures.[3] We could not find any study demonstrating the drug utilization pattern in pregnant women in India on PubMed search (Key words: drug utilization in pregnant women in India, prescribing patterns during pregnancy in India). Hence, the present study was conducted to evaluate the drug utilization pattern during pregnancy in north India.

MATERIALS AND METHODS

The present retrospective randomized cross-sectional study (each women was interviewed only once, regarding drugs used in their present pregnancy since conception) was conducted in the Postgraduate Department of Pharmacology and Therapeutics of a Government Medical College, as practical training of fifth semester medical students, to study drug utilization practices during pregnancy, in women attending the ante-natal clinic of the institution. The study was conducted after taking permission from the institutional review board. Before starting the study, ninety eight medical students were trained in pharmacokinetic and pharmacodynamic changes in pregnancy and rational prescribing, by using audio-visual aids and giving therapeutic exercises. All the students were divided into twenty groups of five each, except the last group (three students). Two groups were alloted to each teacher (senior and junior residents) and written questionnaires were distributed to the student (Anexure-1). Each student had to fill five questionnaires after interviewing pregnant women attending the out patient ante-natal clinic of the institution. Each group of students had to visit the ante-natal clinic on a fixed day of the week. Pregnant women were interviewed in local language, after taking their well-informed written consent. Each student had to interview only one pregnant women per day. The women's statements were also confirmed from the written record, if available with them. No overlapping of the pregnant women was allowed and the study was carried over a period of six months, with effect from June

2005 to December 2005. At the end of the study, only eighty one students submitted their questionnaires by 15th of Jan 2006. Students coming afterwards were not entertained, in order to avoid the chances of manipulations (copying from fellow students) from the student's side. Hence, a total of 405 questionnaires were collected and analysed for various study parameters like; educational status, duration of pregnancy, family income per capita per month, time of first antenatal visit, number of antenatal visits, self medication practices, number of drugs used, number of herbal/homeopathic drugs used, knowledge about contraceptives and knowledge about drug use during pregnancy.

All drugs used during the first (first 12 weeks), second (13th to 24th week) and third (24th week onwards) trimester of pregnancy were further classified into category-A, category-B, category-C, category-D and category-X, according to the classification for drug use during pregnancy, introduced by the US Food and Drug Administration (FDA) in 1979.[4] The category-A includes drugs that have shown no risk to the foetus after adequate, well-controlled studies in pregnant women. For drugs in the category B, animal studies have revealed no evidence of harm to the foetus or any adverse effect, but adequate and well-controlled studies in pregnant women have failed to demonstrate a risk to the fetus. The category C includes the drugs, which have shown an adverse effect in animal studies or no animal studies have been conducted and there are no adequate and well-controlled studies in pregnant women. For drugs in the category D, there is positive evidence of human fetal risk, but the benefits from use in pregnant women may be acceptable despite the risk (e.g., in a life-threatening situation). However, drugs with classification X are "contraindicated in pregnancy".

All the pregnant women were further divided into two groups according to educational status i.e., graduates and under- graduates and into three groups according to economic status i.e., income class-A (per capita income between Rs. 500-999/month), income class-B (per capita income between Rs. 1000-2500/ month) and income class-C (per capita income more than Rs. 2500/ month). Various parameters like self medication practices, use of herbal and homeopathic drugs, number of antenatal visits, knowledge about contraception and knowledge about drug use during pregnancy, were compared between graduates and under- graduates and among the three income groups.

STATISTICAL ANALYSIS

Results were expressed in percentage and inter-group comparison (between graduates vs under- graduates and among the three economic groups) was done using chi-square test. Different categories of drugs used during first, second and third trimester, were also compared using chi-square test. *P*-value <0.05 was considered statistically significant.

RESULTS

A total of 405 (243 primigravida and 152 multigravida) pregnant women were interviewed [Table 1]. 7.40% (30), 24.69% (100) and 67.90% (275) women were in the first, second and third trimester of pregnancy,

Table 1: Characteristics of study population

Parameter	*Number of subjects (%)*		
Education status	Graduates:185 (45.68)	Undergraduates: 220 (54.32)	
Duration of pregnancy	First trimester 30 (7.40)	Second trimester100 (24.69)	Third trimester 275 (67.90)
Gravida	Primi: 243 (60)	Multi: 152 (40)	
Family income per capita per month	Income class-A205 (50.62)	Income class-B 155 (38.27)	Income class-C 45 (11.11)
Time of first ANC	First trimester 200 (49.38)	Second trimester 180 (44.44)	Third trimester 25 (6.17)
Total number ANCs	Less than 3:70 (17.28)	3 to 5: 110 (27.16)	More than 5: 225 (55.55)
Age in years(yrs)	Less than 20 yrs: 25 (6.17)	20 to 35 yrs: 240 (59.26)	More than 35 yrs: 90 (22.22)

First trimester = first 12 weeks, Second trimester = 13 to 24 weeks, Third trimester = 24 weeks onwards, Income class - A = income Rs. 500-999, Income class - B = income Rs. 1000-2500, Income class - C = income more than 2500, ANC: Antenatal check up.

respectively. 6.17% (25), 59.26% (240) and 22.22% (90) women were of less than 20 years, between 20 to 35 years and more than 35 years of age, respectively. The first antenatal checkup was conducted during the first, second and third trimester of pregnancy in 49.38% (200), 44.44% (180) and 6.17% (25) of women, respectively. However, less than three, three to five and more than five antenatal visits were attended by 17.28% (70), 27.16% (110) and 55.55% (225) women, respectively.

A total of 700, 1086 and 686 number of drugs, with an average of 1.73, 2.89 and 2.49 drugs per pregnant women, were used during first, second and third trimester of pregnancy, respectively [Table 2]. Iron, folic acid, vitamins and calcium were the most frequently used drugs, during all the three trimesters of the pregnancy. During the first trimester-anti-emetics, phenobarbitone, isoxsuprine, progesterone and paracetamol, during the second trimester-antacids, protein supplements, antimicrobials and NSAIDs (nonsteroidal anti-inflammatory drugs) and during the third trimester-phenobarbitone, isoxsuprine, antibiotics, NSAIDs, anti-emetics, proton pump inhibitors/ H2 blockers and antihypertensive drugs (nifedipine, methyldopa) were the other commonly used drugs [Table 2].

Category A drugs constituted 55.28% (387), 87.02% (945) and 52.48% (360) (*P*<0.001), category B constituted 26.57% (186), 9.21% (100) and 33.52% (230) (*P*=0.003) and category D constituted 6% (42), 0.09% (1) and 12.54% (86) (*P*=0.020) of the drugs used during the first, second and third trimester of pregnancy, respectively [Table 3]. However, category C drugs constituted 2.90% (20) of total drugs used during the third trimester and category X drugs constituted 5.71% (40) of drugs used during the first trimester. Herbal/ homeopathic drugs constituted 6.42% (45), 3.68% (40) and 1.46% (10) of the drugs used in the first, second and third trimester of pregnancy respectively (*P*=649). Herbal/ homeopathic drugs included multivitamins and iron supplements, calcium, liver tonics, local analgesic ointments, drugs for acid-peptic disease, drugs for leucorrhea and drugs for skin hyper-pigmentation.

It was found that 33.33% (135) women believed that drug use during pregnancy is dangerous to both mother and child. However, 4.94% (20) and 20.98% (85) of women believed that drugs are dangerous for

Table 2: Pattern of drug use during pregnancy

Parameter	*First trimester (n=405) Number (%)*	*Second trimester (n=375) Number (%)*	*Third trimester (n=275) Number (%)*
Exposure to X-rays	20 (4.9)		
USG	50 (12.35)	-160 (42.67)	-10 (3.63)
Drugs used during pregnancy:			
Total number of drugs	700	1086	686
Average/pregnant women	1.73	2.89	2.49
Vitamins	95 (13.57)	120 (11.05)	-
Iron	85 (12.14)	315 (29.00)	160 (23.32)
Folic acid	130 (18.57)	160 (14.73)	120 (17.49)
Calcium	60 (8.57)	305 (28.08)	75 (10.93)
Paracetamol	30 (4.28)	-	10 (1.46)
NSAIDs	-	30 (2.76)	35 (5.10)
Isoxsuprine	35 (5.00)	-	55 (8.02)
Phenobarbitone	40 (5.71)	-	85 (12.39)
Ant acids	17 (2.43)	45 (4.14)	-
Anti-emetics	90 (12.85)	-	25 (3.64)
PPIs/H2 blockers	-	10 (0.92)	25 (3.64)
Antibiotics	26 (3.71)	5 (0.46)	40 (5.83)
Antiprotozoals	-	5 (0.46)	-
Protein supplements	-	40 (3.68)	-
Progesterone	40 (5.71)	-	-
Nifedipine	-	-	20 (2.91)
Methyldopa	-	-	15 (2.18)
Ayurvedic preparations	45 (6.42)	40 (3.68)	10 (1.46)
Drugs for chronic illness			
Insulin	5 (0.71)	5 (0.46)	5 (0.73)
Thyroxin	-	5 (0.46)	5 (0.73)
Anti-epileptics	2 (0.28)	1 (0.09)	1 (0.14)

First trimester = first 12 weeks, Second trimester = 13 to 24 weeks, Third trimester = 24 weeks onwards, n = number, NSAIDs = Nonsteroidal anti-inflammatory drugs, PPI = proton pump inhibitors, USG = ultrasonography.

Table 3: Different categories of drug used during pregnancy

Category of drugs	*First trimester (t.n.d 700) n (%)*	*Second trimester (t.n.d 1086) n (%)*	*Third trimester (t.n.d 686) n (%)*	*P-value**
A	387 (55.28)	945 (87.02)	360 (52.48)	<0.001
B	186 (26.57)	100 (9.21)	230 (33.52)	0.003
D	42 (6.00)	1 (0.09)	86 (12.54)	0.020
C	-	-	20 (2.90)	-
X	40 (5.71)	-	-	-
Others (herbal and homeopathic)	45 (6.42)	40 (3.68)	10 (1.46)	0.649

Category A = multivitamins, iron, folic acid, calcium, thyroxin. Category B = paracetamol, diclofenac sodium, ibuprofen, antacids, metaclopropamide, dicyclomine, rantidine, femotidine, omeprazole, pentaprazole, ampicillin, amoxicillin, cephalosporins, metronidazole, insulin, methyl DOPA. Category C = Nifedipine, Category D = phenobarbitone, carbamazepine, phenytoin. Category x = progesterone, first trimester = first 12 weeks, second trimester = 13 to 24 weeks, third trimester = 24 weeks onwards, t.n.d = total number of drugs, n (%) = number(percentage). **P*-value was calculated after comparing values of first, second and third trimester by using chi-square test with degree of freedom = 2 and *P* value <o.o5 was considered significant.

mother and child/foetus, respectively [Table 4]. 20.98% (85) women believed that drugs are more dangerous during the first trimester, whereas, 37.03% (150) believed that drugs are dangerous if consumed at any time throughout pregnancy. However, only 55.55% (225) females advocated the use of iron/folic acid during pregnancy. Use of calcium, antacids, NSAIDs and antiallergics was advocated by 27.16% (110), 20.98% (85),

Table 4: Knowledge of study population (405) regarding drug use during pregnancy

Parameter	*Number of women (%)*	*Number of women (%)*	*Number of women (%)*
Drugs are dangerous if consumed during	First TM: 85 (20.98), Through out = 150 (37.03)	Second TM:10 (2.47)	Third TM: 0
Irrational drug use in pregnancy is dangerous to:	Mother = 20 (4.94)	Child/ Foetus = 85 (20.98)	Both = 135 (33.33)
Drugs should be used in pregnancy:	Response - yes	Response - no	Response - no
Iron/folic acid	225 (55.55)	23 (5.68)	157 (38.76)
Laxatives	30 (7.40)	79 (19.50)	296 (73.08)
Antacids	85 (20.98)	122 (30.12)	198 (48.88)
Calcium	110 (27.16)	89 (21.97)	206 (50.86)
Antiemetics	10 (2.47)	85 (20.98)	310 (76.54)
Sedatives	15 (3.70)	122 (30.12)	268 (66.17)
NSAIDs	45 (11.11)	32 (7.90)	328 (80.98)
Antibiotics	25 (6.17)	190 (46.91)	190 (46.91)
Antiallergics	45 (11.11)	67 (16.54)	293 (72.34)
Ayurvedic	35 (8.64)	34 (8.39)	336 (82.96)
Homeopathic drugs	29 (7.16)	34 (8.39)	342 (84.44)
cough /cold remedies	38 (9.38)	110 (27.16)	257 (63.45)
Knowledge about contraception	OC = 235 (58.02) IUCDs = 145 (35.80)	Injectibles = 60 (14.81)	Barrier methods =100 (24.69)

TM = trimester, first trimester = first 12 weeks, Second trimester = 13 to 24 weeks, Third trimester = 24 weeks onwards, OC = Oral contraceptives, IUCDs = Intrauterine contraceptive devices, NSAIDs = Nonsteroidal anti-inflammatory drugs

11.11% (45) and 11.11% (45) of women, respectively, whereas, use of antiemetics, sedatives, antibiotics, cold and cough remedies and herbal/homeopathic drugs was advocated by less than 10% of women [Table 4]. 58.02% (235) females had knowledge about oral contraceptives and only 24.69% (100) of women had knowledge about barrier contraceptives [Table 4].

On evaluating the effect of education on various parameters, it was found that self-medication and homeopathic/ herbal drugs were used more in graduates, than in undergraduates (*P*<0.001 and 0.044 respectively) [Table 5]. The percentage of women having knowledge about contraceptives and attending more than five antenatal visits, was more in graduates than in undergraduates [Table 5]. More percentage of graduates advocated the use of iron/folic acid/calcium supplements during pregnancy, than in undergraduates (*P*<0.001). Iron, folic acid, vitamins, calcium, paracetamol, antacids, NSAIDs, anti-emetics, H2 blockers and herbal drugs, were frequently consumed as self-medication.

Similarly, on evaluation of the drug utilization pattern in relation to socioeconomic variations, self-medication, homeopathic/ herbal drug use and knowledge about contraceptives were found to be more in the higher socioeconomic status (income class B and C), than in the lower socioeconomic status (income class-A) [Table 5]. More women from the higher socioeconomic class advocated for the use of iron/folic acid/ calcium supplements during pregnancy, than the lower socioeconomic class [Table 5].

DISCUSSION

Rational drug use in pregnancy requires the balancing of benefits and potential risks associated with the use of the drug. The

Table 5: Impact of education and economic status on various parameters related to drug use during pregnancy

Parameters	*Graduates (185) number (%)*	*Undergraduates (220) number (%)*	*P-value**	*Income C.A (205) number (%)*	*Income C.B (155) number (%)*	*Income C.C (45) number (%)*	*P-value†*
Self medication Practices	165 (89.18)	78 (35.45)	<0.001	79 (38.53)	125 (80.64)	39 (86.67)	<0.001
Use of homeopathic/ herbal drugs	42 (22.70)	18 (8.18)	0.044	16 (7.80)	28 (18.06)	18 (40)	<0.001
Anti-natal visits attended:							
<3	12 (6.48)	58(26.36)	0.002	49 (23.90)	21 (13.54)	-	<0.001
3-5	44 (23.78)	66 (30)	0.805	44 (21.46)	52 (33.54)	14 (31.11)	0.102
>5	129 (69.73)	96 (43.63)	0.003	112 (54.63)	82 (52.90)	31 (68.88)	0.273
Knowledge about contraceptives (any form)	175 (94.59)	110 (50)	<0.001	92 (44.87)	138 (89.03)	45 (100)	<0.001
Advocated use of iron/folic acid/calcium during pregnancy	155 (83.78)	70 (31.81)	<0.001	35 (17.07)	145 (93.54)	45 (100)	<0.001

Income C.A = per capita Rs. 500-999, Income C.B = per capita Rs. 1000-2500, Income C.C = per capita > Rs. 2500. **P*-value was calculated after comparing values between graduates and undergraduates by using chi-square test with degree of freedom = 1, †*P*-value was calculated after comparing values of three income groups by using chi-square test with degree of freedom = 2 and *P*-value <0.05 was considered significant.

benefits of rational drug use during pregnancy are not only restricted to the recovery of maternal health, but are also helpful in the development of the fetus. By appropriate treatment of conditions like diabetes mellitus and infectious diseases of genital organs, embryopathies, preterm births and abortions could be prevented.[5,6] In our study, iron, folic-acid, calcium and vitamins were the most frequently used drugs in pregnancy, with an average of 1.73 to 2.89 drugs per pregnant women. Phenobarbitone, isoxsuprine, progesterone, paracetamol, NSAIDs, antibiotics, anti-emetics, proton pump inhibitors/H2 blockers, antacids and antihypertensive drugs (nifedipine, methyldopa) were the other commonly used drugs. Periconceptional folic-acid supplementation can prevent most neural-tube defects and other congenital abnormalities of the cardiovascular system, urinary tract and limb deficiencies.[7-10] Moreover, folic-acid supplementation in pregnancy is associated with the decreased incidence of habitual spontaneous abortion and pregnancy complications (e.g., placental abruption and preeclampsia).[4,15] However, folic-acid was taken by less than 50% of women (130, 160 and 120 women in the first, second and third trimester, respectively) in the present study.

A similar trend with drug use in pregnancy, was reported from other parts of the world. In a prospective survey in Southwestern Finland, iron and vitamin supplementation were the most frequently used drugs, followed by analgesics, tocolytic agents and drugs for chronic conditions and common pregnancy symptoms.[11] In another study from Australia, folate (70%), iron (38%) and multivitamins (27%) were the most frequently taken drugs by pregnant women; along with herbal drugs like, ginger (20%) and raspberry leaf (9%).[12] In the present study, ayurvedic / homeopathic drugs constituted 6.42, 3.68 and 1.46% of total drugs used during the first, second and third trimester of pregnancy, respectively. A

similar trend for use of herbal drugs like cannabis, ginger, raspberry leaf etc. during pregnancy, was reported from other countries.[12,13]

In the present study, use of herbal/ homeopathic drugs was reported significantly more in graduates than in undergraduates and more in the high socio-economic class than in the lower. Earlier, a study from Norway reported herbal drug use by 36% pregnant women and factors like prior use of herbs, high knowledge about herbal drugs and age between 26 and 35 years, were associated with it.[16]

Herbal preparations are classified as dietary supplements by FDA and are not regulated like conventional drugs. There is always a threat of interaction between herbal drugs and other medications, potentially making them less active or less safe.[17]

The majority of the drugs used during pregnancy in the present study, were from category-A, followed by category-B and category-D.5.71% and 2.90% of drugs used during the first and third trimester, were from category-X and category-C, respectively. There are reports of use of potentially harmful drugs (category D drugs-1.5% to 4.8% and category X drugs-2.3 to 4.6%) during pregnancy from other developed and underdeveloped countries of the world.[3,18-20] In a retrospective, register-based cohort study in Finland, it was found that 20.4% of women purchased at least one drug classified as potentially harmful during pregnancy and 3.4% purchased at least one drug classified as clearly harmful.[21] According to the HIMAGE study from France, 4.6% of women were exposed to drugs (mainly NSAIDs), involved in risk during pregnancy.[22] In a study from Bratislava and Nitra, it was reported that a vast majority of prescribed drugs during pregnancy, belonged to category-C.[23]

In the present study, use of OTC (over the counter) drugs as self medication, was reported significantly more in graduates than in undergraduates; as well as more in the higher economic class, than in the lower. Earlier also, in a study from USA, OTC medications (e.g., ibuprofen) that are contraindicated in pregnancy, were used at unexpectedly high rates during pregnancy.[24] In a similar study on general public, according to 36, 19 and 5% of the respondents, the use of common OTC drugs during pregnancy represents a small risk, a great risk and completely risk-less picture, respectively.[25] In an epidemiological study, NSAID use during conception or during pregnancy in 5% women, was associated with an 80% increased risk of miscarriage.[26]

Pregnant women using necessary drug treatments may suffer permanent psychological stress due to the anxiety and fear created by the notion, that nearly all drugs cause congenital abnormality. A study from Hungary reported that 3,000 pregnancies were terminated during the first trimester, due to a medical indication connected to drug use during pregnancy.[1] In the present study, 33.33% women believed that drug use during pregnancy is dangerous to both mother and child and 37.03% women believed that drugs are dangerous if consumed at any time throughout pregnancy.

However, progesterone, classified as a category-X drug used during the first trimester, was not associated with a teratogenic effect. Similarly, there are various other lacunae in the FDA classification, for foetal risk. Many drugs in category-D were classified, considering the general similarity of the chemical structure. However, mild differences in the chemical structure can change the teratogenic potential, for example the teratogenic oxytetracyclines and non-teratogenic doxycycyline, within the group of tetracyclines.[1]

In the existing scenario, knowledge about barrier contraceptives is important to prevent HIV infections and various sexually transmitted diseases, in women of child-bearing age. However, in the present study, only 24.69% women had knowledge about barrier methods. Graduates and women from the higher socioeconomic class have more knowledge about contraceptives, than undergraduates and women from lower socioeconomic class. A previously published study also reported more use of spacing methods in educated couples (80%) after the birth of their first child, than uneducated couples (50% even after birth of their third child).[27]

There is a need to educate and council women of child-bearing age regarding advantages and disadvantages of drug use during pregnancies, with a special reference to alternative therapies and self-medication. Even the doctors need to be trained to give rational treatment to the pregnant women, by including community pharmacology studies in their academic curriculum. Earlier, a study from Canada had demonstrated significant improvement in preventive care, continuity of care and, indicators of diagnostic performance in doctors, after transition from a traditional curriculum to a community-oriented problem- based learning curriculum.[28]

In the present study, interviews were held before the pregnancy outcome is known, thereby minimizing the bias of recall. However, inability to know the effect of drugs on pregnancy outcome, as well as inability to study the effect of factors like marital status, history of chronic diseases, bad obstetric history and multiparity or nulli-parity on the pattern of the drug use, could be considered as lacunae of the study. The present study has included tertiary care hospital-based sample; however, conditions could be worst in the remote and rural areas of India. Hence, such periodic studies are further required in diverse environmental, social, educational and cultural conditions, so that the therapeutic guidelines could be revised accordingly, to give rational care to the community.

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Anexure -1

Name _____ Age _____ Gravida _____ Income per capita _____
Time of Ist antenatal visit _____ Duration of present pregnancy _____
Total number of antenatal visit _____ Treatment for any chronic condition _____
Self medication _____ Prescription drug _____
Immunization with TT _____

1st trimester drug used X-ray _____ USG _____
2nd trimester drug used X-ray _____ USG _____
3rd trimester drug used X-ray _____ USG _____

Drug use in pregnancy is dangerous in 1st _____ 2nd _____ 3rd trimester _____ through out _____
Drug use in pregnancy is dangerous to mother _____ foetus/child _____ both _____
Knowledge about contraception:
Oral contraceptives _____ IUCDS _____ Barrier method _____ Injectibles _____
Advocate the use of following Drugs:

Drugs should be used in pregnancy:	Response – yes	Response – no	No response
Iron/folic acid			
Laxatives			
Antacids			
Calcium			
Antiemetics			
Sedatives			
NSAIDs			
Antibiotics			
Antiallergics			
Ayurvedic			
Homeopathic drug			
cough/cold remedies			