

Knowledge and Attitude Regarding Drugs and Cosmetic Use among Pregnant Women Attending Antenatal Clinic of a Tertiary Care Center

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ABSTRACT

Background: Inappropriate use of drugs and certain cosmetics can cause potential harm to the mother as well as the fetus. Good knowledge about drug use can help pregnant women make informed decisions. This study was conducted to assess the knowledge and attitude among pregnant women regarding the usage of drugs and cosmetics during pregnancy. **Materials and Methods:** This cross-sectional study was conducted in the antenatal clinic of a tertiary care centre from August to November 2018 in 384 randomly selected pregnant women. Data were collected using an interviewer-administered questionnaire. Data analysis was done using SPSS version 21.0. **Results:** Around 51.56% of pregnant women believed that drugs may have an effect on them or the fetus and 11.19% believed the same for cosmetics. More than half of them feel that drugs should mainly be avoided in the third trimester. Around 25% of women believed that the irrational use of drugs could cause congenital anomalies in the fetus. About 58.07% of women were of the opinion that pregnancy requires the consumption of many drugs and 34.11% preferred to use alternative medicine during pregnancy. The primary source of information in majority of women was doctors followed by media. Around 32.03% of women had taken drugs outside a doctor's prescription during their pregnancy. A decrease in cosmetic use was reported by 4.94% women. **Conclusion:** The knowledge regarding the correct use of drugs and cosmetics during pregnancy is poor. The use of non-prescribed medications is high. Educational programs for women to increase their knowledge of the potential risks to them as well as the fetus are necessary.

Key words: Pregnancy, Knowledge, Drugs, Cosmetics, Antenatal care.

INTRODUCTION

Pregnancy is a physiological condition that may require the usage of medications for pregnancy-induced conditions and acute or chronic diseases. The usage of medications may be continuous or intermittent depending on the condition. The use of inappropriate drugs can cause potential harm to the mother as well as the fetus.¹⁻³ There is also evidence that certain chemicals in cosmetic products are also potential teratogens.⁴⁻⁸ Only the medications prescribed by an obstetrician like vitamins, minerals and other supplements or medications to treat common symptoms during pregnancy should be taken. It is therefore of utmost importance that, prescription medications without the physician's prescription and over the counter medication is avoided in pregnancy. Good knowledge about drug use can help pregnant women make informed decisions. Fewer studies have been conducted in India regarding knowledge of pregnant women regarding the usage of drugs and cosmetics during pregnancy.

This study was therefore conducted with an objective to assess the knowledge and attitude among pregnant women regarding the usage of drugs and cosmetics during pregnancy. This information can be useful in providing health education or counselling during the antenatal sessions.

MATERIALS AND METHODS

This cross-sectional study was conducted in the antenatal clinic of a tertiary care centre in a metropolitan city from August to November 2018. At 95% Confidence interval, using the formula, $n = (Z_{1-\alpha/2})^2 * P(1-P)/d^2$ with $P=0.50$ and $d=0.05$, we obtained a minimum sample size of 384.⁹ Pregnant women of 18 years and above were recruited using simple random sampling until the desired sample size was reached. Ethical approval was obtained from the Institutional Ethics Committee. Written informed consent was taken from all participants. Data collection was done using an interviewer-administered pre-validated, semi-structured

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questionnaire in the local language. Data entry and analysis was done using SPSS version 21.0.

RESULTS

This cross-sectional study conducted in 384 pregnant women using a semi-structured questionnaire yielded the following results. The socio-demographic and personal profile of the study participants is presented in Table 1.

Knowledge regarding drug and cosmetic use (Table 2): In our study, 198 (51.56%) pregnant women believed that drugs may have an effect on them or the fetus. This belief was significantly higher among older women ($p=0.03$) and women of higher educational status ($p<0.0000.1$). Out of these, 72 (18.75% of total) were able to name at least one drug which is harmful in pregnancy. Women residing in urban areas ($p=0.024$) and with higher education status ($p<0.0000.1$) and socio-economic status ($p<0.0000.1$) had a significant association with this concept. Also, 43 (11.19%) women believed that cosmetics may have an effect on them or the fetus. All of them also believe that not all cosmetics are harmful during pregnancy. Most of them believed that drugs should mainly be avoided in the third trimester (214, 55.72%), followed by second (93, 24.21%) and first trimester (77, 20.05 %). Around 96 (25%) women believed that the irrational use of drugs could cause congenital anomalies in the fetus. This belief was significantly higher among women with higher educational status ($p<0.0000.1$), employed in clerical and other office jobs ($p<0.0000.1$) and primigravida ($p=0.043$). About 223 (58.07) women were of the opinion that pregnancy requires the consumption of many drugs. This opinion was significantly associated with primigravida women ($p<0.0000.1$). Also, 131 (34.11%) preferred to use alternative medicine during pregnancy.

Figure 1 shows source of information regarding drug and cosmetic use in current pregnancy Out of 384 women, 156 (40.63 %) women told that their source of information regarding drug and cosmetic use in pregnancy were doctors or health care providers, for 84 (21.88%) women it was mother in law and other relatives and for the rest 144 (37.5 %) women it was internet or media. More than half of the women were of the opinion that doctors do not give enough time for advice regarding drug use in pregnancy (253, 65.88%).

Attitude regarding drug and cosmetic use: In this study, 123 (32.03%) pregnant women said to have taken drugs outside a doctor's prescription during their pregnancy mostly for ailments like vomiting, rhinitis, fever and headache. Younger women ($p=0.0006$) and primigravida ($p=0.001$) were significantly associated with this attitude. The most common reasons for taking drugs outside prescription were non-serious nature of the illness (61, 49.59%), emergency (44, 35.77%) and prior knowledge about safety (18, 14.63%). More than half of the participants i.e. 254 (66.14%) of them reported to an increase in drug usage in pregnancy (apart from supplements), 81 (21.09%) reported a decrease in drug usage

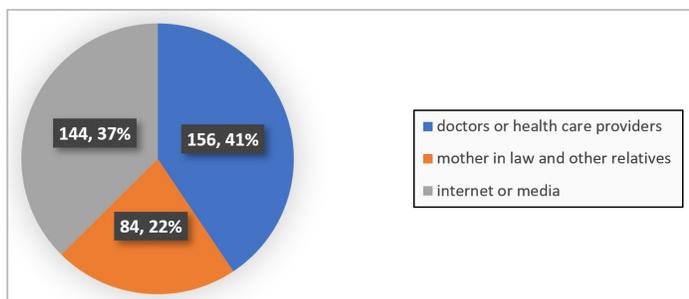


Figure 1: Source of information regarding drug use in current pregnancy (n=384).

Table 1: Socio-demographic and personal profile of the study participants.

Characteristics	Number(n=384)	Percentage	
Age (in years)	18-25	189	49.2
	25-35	169	44
	>35	26	6.7
Educational Status	Illiterate	42	10.9
	Primary	123	32.03
	Secondary	19	4.94
	Higher secondary	111	28.9
Trimester	Graduation	89	23.1
	First	168	43.75
	Second	133	34.63
Place of Residence	Third	83	21.61
	Rural	29	7.5
	Urban	199	51.8
Occupation	Sub -Urban	156	40.6
	Housewife	127	33.07
	Domestic help	63	16.4
	Cook (noun)	55	14.32
Parity	Clerical work	42	10.93
	Others	97	25.26
	Primigravida	166	43.22
History of Child Birth with any Congenital abnormality	Multigravida	218	56.77
	Yes	3	0.78
Socio-economic Status (SES) (Modified BG Prasad classification)	No	381	99.2
	Lower	31	8.07
	Lower middle	99	25.78
	Middle	151	39.32
Chronic illness (Diabetes, Epilepsy or Hypertension)	Upper middle	69	17.96
	Upper	34	8.85
No. of medications in current pregnancy (apart from supplements)	Yes	2	0.52
	No	382	99.47
	≤ 1	187	48.69
No. of medications in current pregnancy (apart from supplements)	1-2	111	28.90
	>2	86	22.39

and rest were unsure. A decrease in cosmetic use was reported by 19 (4.94%) women. This attitude was significantly associated with higher education ($p=0.014$) and socio-economic status (SES) ($p<0.0000.1$).

DISCUSSION

Use of medications with or without a physician's prescription or over the counter medications during pregnancy is showing an increasing trend.^{10,11} This cross-sectional study was conducted in 384 pregnant women with an objective to assess the knowledge and attitude among

Table 2: Association of concepts regarding drug use in pregnancy with socio-demographic and personal characteristics of participants.

Concept	Yes /agree	Σ^2 statistic value, degree of freedom (d.o.f) and P-value					
		Age	Education	Residence	Occupation	Parity	SES
Drugs have an effect on mother and/or fetus	198 (51.56 %)	$\Sigma^2 = 7.0012$ d.o.f = 2 P = 0.03018	$\Sigma^2 = 111.9105$ d.o.f = 4 P < 0.00001	$\Sigma^2 = 1.2033$ d.o.f = 2 P = .547914	$\Sigma^2 = 3.33$ d.o.f = 4 P = .504196	$\Sigma^2 = 0.9497$ d.o.f = 1 P = .329797	$\Sigma^2 = 8.4534$ d.o.f = 4 P = .076313
Could name at least one drug which is harmful in pregnancy	72 (18.75%)	$\Sigma^2 = 3.1312$ d.o.f = 2 P = .208962	$\Sigma^2 = 88.5482$ d.o.f = 4 P < 0.00001	$\Sigma^2 = 7.4139$ d.o.f = 2 P = .024552.	$\Sigma^2 = 6.2832$ d.o.f = 4 P = .178974	$\Sigma^2 = 0.0533$ d.o.f = 1 P = .81737	$\Sigma^2 = 84.1082$ d.o.f = 4 P < 0.00001
Cosmetics may have an effect on mother and/or the fetus	43 (11.19%)	$\Sigma^2 = 0.6498$ d.o.f = 2 P = .722616	$\Sigma^2 = 0.338$ d.o.f = 4 P = .987228	$\Sigma^2 = 3.0244$ d.o.f = 2 P = .220427	$\Sigma^2 = 1.1548$ d.o.f = 4 P = .885479	$\Sigma^2 = 0.2126$ d.o.f = 1 P = .644745	$\Sigma^2 = 0.7029$ d.o.f = 4 P = .950972
Drugs could cause congenital anomalies in fetus	96 (25%)	$\Sigma^2 = 0.4244$ d.o.f = 2 P = .808783	$\Sigma^2 = 124.2849$ d.o.f = 4 P < 0.00001	$\Sigma^2 = 0.7016$ d.o.f = 2 P = .704109	$\Sigma^2 = 137.7242$ d.o.f = 4 P < 0.00001	$\Sigma^2 = 4.0889$ d.o.f = 1 P = .043167	$\Sigma^2 = 0.4633$ d.o.f = 4 P = .976971
Pregnancy requires consumption of many drugs	223 (58.07)	$\Sigma^2 = 0.781$ d.o.f = 2 P = .676722	$\Sigma^2 = 4.1584$ d.o.f = 4 P = .384993	$\Sigma^2 = 1.5306$ d.o.f = 2 P = .465196	$\Sigma^2 = 2.168$ d.o.f = 4 P = .70489	$\Sigma^2 = 33.1958$ d.o.f = 1 P < .00001	$\Sigma^2 = 9.0948$ d.o.f = 4 P = .058773
Is it preferable to use alternative medicine during pregnancy	131 (34.11%)	$\Sigma^2 = 0.6524$ d.o.f = 2 P = .721653	$\Sigma^2 = 1.7658$ d.o.f = 4 P = .778742	$\Sigma^2 = 0.2069$ d.o.f = 2 P = .901711	$\Sigma^2 = 1.2113$ d.o.f = 4 P = .876238	$\Sigma^2 = 0.0886$ d.o.f = 1 P = .765987	$\Sigma^2 = 2.9826$ d.o.f = 4 P = .560734
Taken drugs outside a doctor's prescription	123 (32.03%)	$\Sigma^2 = 14.7949$ d.o.f = 2 P = .000613	$\Sigma^2 = 5.7628$ d.o.f = 4 P = .217575	$\Sigma^2 = 1.1025$ d.o.f = 2 P = .576223	$\Sigma^2 = 0.7181$ d.o.f = 4 P = .949083	$\Sigma^2 = 10.7166$ d.o.f = 1 P = .001062	$\Sigma^2 = 4.1336$ d.o.f = 4 P = .388227
Increase in drug usage in pregnancy (apart from supplements)	254 (66.14%)	$\Sigma^2 = 1.2892$ d.o.f = 2 P = .524885	$\Sigma^2 = 4.8611$ d.o.f = 4 P = .301851	$\Sigma^2 = 5.4124$ d.o.f = 2 P = .066791	$\Sigma^2 = 2.9578$ d.o.f = 4 P = .564916	$\Sigma^2 = 1.2803$ d.o.f = 1 P = .257844	$\Sigma^2 = 6.8452$ d.o.f = 4 P = .144298
Decrease in drug usage in pregnancy (apart from supplements)	81 (21.09%)	$\Sigma^2 = 0.0592$ d.o.f = 2 P = .970848	$\Sigma^2 = 0.8237$ d.o.f = 4 P = .93524	$\Sigma^2 = 0.8744$ d.o.f = 2 P = .645843	$\Sigma^2 = 2.1833$ d.o.f = 4 P = .702091	$\Sigma^2 = 0.5798$ d.o.f = 1 P = .446402	$\Sigma^2 = 0.1778$ d.o.f = 4 P = .996276
Decrease in cosmetic use in pregnancy	19 (4.94%)	$\Sigma^2 = 0.6971$ d.o.f = 2 P = .705725	$\Sigma^2 = 12.4294$ d.o.f = 4 P = .014428	$\Sigma^2 = 0.3071$ d.o.f = 2 P = .857669	$\Sigma^2 = 0.06$ d.o.f = 4 P = .999558	$\Sigma^2 = 3.2348$ d.o.f = 1 P = .072089	$\Sigma^2 = 28.7631$ d.o.f = 4 P < 0.00001

[Note: P<0.05 is considered significant, SES = Socio-economic Status, Σ^2 = Chi- square statistic value]

pregnant women regarding the usage of drugs and cosmetics during pregnancy.

In our study, 51.56% of the pregnant women believed that drugs may have an effect on them or the fetus and 25% believed that irrational drugs could cause congenital anomalies in the fetus. These findings are similar to a study by Dureja *et al.* where 40% of women believed that drugs have an effect on the fetus but only 22.4% believed that irrational use can cause congenital anomalies in the fetus.¹² Gopinath *et al.* reported that 17% of women believed that medications were responsible for congenital abnormalities of their newborn.¹³ However, in a study in Italy a higher number of women i.e. 81.15 % knew about the possibility of harm to the fetus due to medications used in pregnancy.¹⁴ This higher rate could be attributed to higher education status and awareness. We also found a significant association between higher educational status and knowledge regarding drug use in pregnancy. Knowledge regarding congenital anomalies was additionally associated with employment type i.e. those employed in clerical and other office jobs. These findings are

similar to a study by Zaki *et al.* where the education level and type of employment were significantly associated with knowledge of pregnant women regarding drugs.¹⁵

Around 19% of women in our study were able to name at least one drug which is harmful in pregnancy. Women residing in urban areas and with higher education and socio-economic status were better at it. Gopinath *et al.* also report that residents of urban areas have more risk awareness about drug usage in pregnancy.¹³ Kamuhabwa *et al.* reported that 31.5% of women were able to mention certain drugs harmful during pregnancy.¹⁶ In contrast, two studies have reported a very less proportion of women (1-4%) who could list drugs harmful during pregnancy.^{12,13}

Women in our study believed that drugs should mainly be avoided in the third trimester, followed by the second and first trimester. In contrast to this, more than half of the participants in Eldalo *et al.*¹⁷ and almost all in Zaki *et al.*¹⁵ knew that drugs should mainly be avoided in the first trimester.

More than half of the women (58.07%) in our study were of the opinion that pregnancy requires the consumption of many drugs. This opinion was significantly higher in primigravida women. More than half of the participants (66.14%) reported an increase in drug usage in pregnancy. Also, 34.11% preferred to use alternative medicine during pregnancy. Similar findings were reported by Gopinath *et al.* and Dureja *et al.* where 30% and 66.6% of women respectively believed natural remedies/alternative medicines can be used in pregnancy. They also reported that around 60% of the women thought they were prescribed many medications by the physicians.^{12,13}

Around 11 % of women in our study believed that cosmetics may have an effect on them or the fetus but, all of them also believe that not all cosmetics are harmful during pregnancy. A decrease in cosmetic use during pregnancy was reported by 4.94% women. Dureja *et al.* reported 23.4% of women had knowledge of the effect of the use of cosmetics during pregnancy which is higher than that of our findings.¹² A study by Marie *et al.* showed that few women stopped cosmetic use during pregnancy except for nail polish and almost half of them considered that there is no risk in the use of cosmetics during pregnancy.¹⁸

We also found that 32.03% of pregnant women said to have taken drugs outside a doctor's prescription during their pregnancy mostly for ailments like vomiting, rhinitis, fever and headache. Younger women and primigravida were significantly associated with this attitude. Similarly, in a study by Navrao *et al.* 43.9 % had used drugs without physician's advice. The most frequent reasons were fever/common cold symptoms (32.6%), headache/migraine (29.5%), digestive disorders (18.2%) and nerve pain (15.5%).¹⁴ Zaki *et al.* reported that most commonly used drugs were paracetamol and vitamins (13.2%), antibiotics (2.6%), herbal remedies (4.6%) and medications to treat nausea and vomiting in pregnancy (2.6%), NSAIDs, anti-histaminic and heartburn medications (1.3%).¹⁵ In contrast, 96 % women did not take drugs without physician's advice in a study by Eldalo *et al.*¹⁷ In our study, most common reasons for taking drugs outside prescription were non-serious nature of illness (49.59%), emergency (35.77%) and prior knowledge about safety (14.63%). Navrao *et al.* reported that the main reasons were a not serious disease (47%), advice/ information by pharmacists (29.7%), prior knowledge about safety in pregnancy (14.6%) and emergency care (13.5%).¹⁴ In 40.63 % of women, the primary source of information regarding drug and cosmetic use in pregnancy were doctors or health care providers, followed by internet or media and mother in law and other relatives. In other studies conducted worldwide, the proportion of women obtaining information doctors is more than 60%.^{12,14,15,17} In a study by Eldalo *et al.* 60.2% obtained this information from physicians, 34.4% from pharmacists and only 1.4% from media.¹⁷ Navrao *et al.* reported that 75% obtained information from physicians, followed by the internet in 47% and pharmacists in 14.7%.¹⁴ Zaki *et al.* reported that gynecologists (58.1%) followed by a general practitioner (13%), pharmacist (11%) and lastly the media, family and friends as well as the internet (10%) were primary sources.¹⁵ Dureja *et al.* also reported similar findings.¹²

We found that in our study around 66% of the women were of the opinion that doctors do not give enough time for advice regarding drug use in pregnancy and these findings are also corroborated by many studies.^{12,15} However, in contrast to our findings, Eldalo *et al.* reported that 71% of women thought that they received complete information about drugs from their physicians.

CONCLUSION

The knowledge regarding the use of drugs and cosmetics among pregnant women is poor. Less than half of them have correct knowledge regarding the effects of drugs and cosmetics on the health of mother and fetus. The use of over the counter medication or non-prescribed

medications among pregnant women is also high. The primary source of information in the majority of them is doctors. The results provide a good opportunity to include educational programs for women and increase their knowledge of the potential risks to them as well as the fetus in order to reduce self-medication.

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CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest

ABBREVIATIONS

SES: Socio-economic status; Σ^2 : Chi- square statistic value.

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